

ATTACHMENT 01

FIFTEENTH ANNUAL REPORT
OF THE
PUBLIC SERVICE COMMISSION
OF OREGON
TO THE
GOVERNOR

JANUARY 1, 1921, to
DECEMBER 31, 1921



SALEM, OREGON:
STATE PRINTING DEPARTMENT
1923

**PUBLIC SERVICE COMMISSION
OF OREGON**

**FRED A. WILLIAMS, Chairman,
HYLEN H. COREY,
FRED G. BUCHEL,**
Commissioners.

WILLIAM P. ELLIS, Secretary.

In the matter of the application of the PORTLAND GAS AND
COKE COMPANY for authority to increase rates for gas } U-F-328
service.

SECOND AMENDED ORDER

Order entered May 24, 1921—P. S. C. Order No. 714

STATEMENT

The Commission made the following reservations in its Order No. 680, to wit:
" * * * The Commission herein reserves the right upon ten days' notice to the utility and others interested to make such modification and revisions in the rates, rules and regulations herein prescribed, as may be proper and meet in the premises."

In accordance therewith, an amended Order No. 696, requiring certain reductions in gas rates equivalent to a 15-cent drop in oil prices was made effective April 10, 1921.

Oil Reduction

Two further decreases in oil prices per barrel, of 20 cents on May 5, 1921, and 25 cents on May 14, 1921, were announced; the latter following so closely that no oil was purchased at the former quotation. This order will therefore, pursuant to the above quoted provision, prescribe further reductions equivalent to the present total 45-cent decrease in oil prices. Check of the \$2.55 oil now on hand shows that this order may be made effective June 6, 1921.

In the first order of this Commission in this case, entered January 15, 1921, provision was made for an abnormal and unusual increase in the cost of fuel oil; as a consequence, when prices of other commodities were falling, an increase in the cost of gas became a necessity if the service was to be continued.

Gas Rate Reduction General

In our present order, as in the one effective April 10, we are in a similar manner reducing the rates for gas, giving to the consumer the entire advantage resulting from the reduction in oil costs. As at the time of our second order, we are now confronted with the task of equitably distributing this reduction in oil cost to the different classes of gas users.

The Commission, as heretofore, by classifying, as operating revenue, all profits from by-products (briquettes) and from merchandising, causes every dollar of profit thus made to apply toward a reduction in the cost of gas used by the consumer, which results in Portland having one of the lowest rates among the various cities using manufactured gas.

Reduction of Initial Charge

The Commission realizes that it is "stretching a point" in reducing the present initial charges to the amounts hereinafter fixed; nevertheless, after full consideration of all the attendant circumstances entering into the establishment of this rate, it is believed that the minimum customer is entitled to this recognition. It is noted in this connection that this charge for larger sized meters has also been modified.

Optional Provision for Volume Sales

The schedules hereinafter established fixes the rates in the last block in each of the Schedules A-1 and A-2 at 70 cents. The Commission in consideration of the actual costs involved is of the opinion that it is not justified in requiring a further reduction; nevertheless, should the utility of its own initiative again see fit to make such concession, to retain its large volume customers, the Commission again will offer no objection, provided, however, that the utility in so doing must not penalize other consumers.

The application of the service connection charge will be modified to apply only to those customers requiring installation of meter, or where meter has been locked for discontinuance of service. Consequently, where change of customer occurs, with no discontinuance of service, such charge shall not apply.

The rates and rules hereinafter prescribed are in accordance with the above outlined policy. We have also provided, as in the two preceding orders, that these rates are the maximum rates; consequently, the utility has had, and now has, the opportunity to so modify any charge prescribed by the Commission, providing such modification does not result in discrimination.

FINDINGS

Based on the foregoing statement and the record herein, and being fully advised in the premises, the Commission makes the following findings, to wit:

1. That in order to conform to the reduced cost of oil hereinbefore referred to, Orders No. 680 and 696 of this Commission should be modified and amended and the rates therein set forth revised as follows:

SCHEDULE A-1—RESIDENTIAL AND COMMERCIAL RATE

	<i>Rate per Month</i>
First 300 cubic feet or less per month, for installations served by meters of capacity less than 10 light B	\$.75
(For similar initial charges for meters 10 light B and larger—see below)	
Next 9,700 cubic feet, per month	\$1.20
Next 30,000 cubic feet, per month	1.05
Next 60,000 cubic feet, per month90
Next 100,000 cubic feet, per month75
Excess over 200,000 cubic feet, per month70

Schedule A-1 applies to sales to other gas utilities.

SCHEDULE A-2—HOUSE HEATING AND GAS ENGINE RATE

First 300 cubic feet or less per month, for installations served by meters of capacity less than 10 light B	\$.75
(For similar initial charges for meters 10 light B and larger—see below)	
Next 2,700 cubic feet or less, per month90
Excess over 3,000 cubic feet or less per month70

The initial charge as set out below shall apply in this schedule for ten periods only per year (all monthly except June, July and August shall constitute one period) service for house heating and for the entire twelve months for gas engine service.

Discount for Prompt Payment

A discount for prompt payment of 5 per cent will apply to all bills under Schedules A-1 and A-2.

Table of Initial Charges for First 300 Cubic Feet, or Less

Applies to both Schedules A-1 and A-2.

<i>Size</i>	<i>Initial Charge</i>
10 Light B, 10 Light Sprague and 20 light	\$.90
30 Light	1.15
45 Light	1.40
60 Light and 30 light B	1.60
100 Light and 60 light B	2.10
200 Light and 100 light B	3.50
300 Light	5.00

SCHEDULE A-4

Service Connection Charge

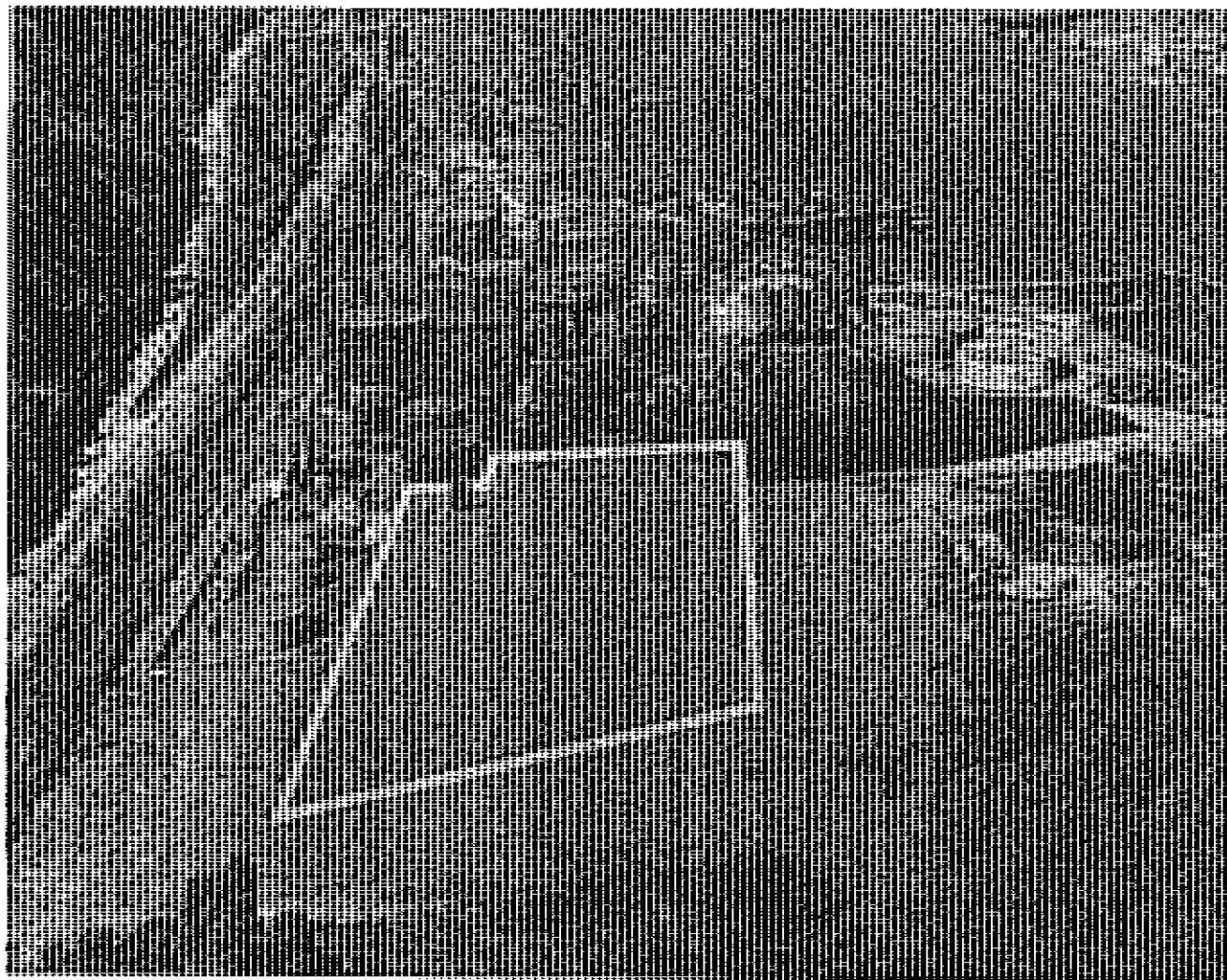
For connecting or reconnecting service a charge of \$1.00 for the first meter, and a charge of \$0.50 for each additional meter connected or reconnected at the same time and location. This charge shall apply only to customers requiring installation of meter, or where meter has been locked for discontinuance of service.

2. That June 6, 1921, is a reasonable date on which this change and modification should be and become effective.

ORDER

IT IS THEREFORE ORDERED that the said Orders No. 680 and 696 of this Commission be and they hereby are modified and amended as hereinbefore set out, and that the foregoing amended schedules shall be and become effective on all meter readings of the Portland Gas and Coke Company on and after the sixth day of June, 1921, and prior to said date the company shall file with this Commission, in accordance with the requirements of law and the rules of this Commission, a tariff establishing a schedule of rates which does not exceed the maximum rates above quoted, and for brevity and to make more definite and certain, by this reference made a part hereof.

ATTACHMENT 02



Portland Gas & Coke Company's gas and by-products manufacturing plant is shown in this aerial photograph, with the Willamette River and Company dock at the right and the Portland-Astoria highway at the left. In the foreground, inside the white lines, is the site of the new addition which will add 6,000,000 cubic feet to the daily gas manufacturing capacity and will substantially increase the Company's output of chemical by-products. The new unit will operate in conjunction with the present works.

ANNUAL REPORT

1940

PORTLAND GAS & COKE COMPANY

BOARD OF DIRECTORS

C. F. ADAMS.....Portland, Oregon <i>Chairman of the Board of The First National Bank of Portland</i>	D. C. O'REILLY.....Portland, Oregon <i>President of the Diamond O Navigation Company</i>
H. L. CORBETT.....Portland, Oregon <i>President of Corbett Investment Company</i>	C. W. PLATT.....Portland, Oregon <i>Secretary and Treasurer of the Company</i>
D. T. HONEYMAN.....Portland, Oregon <i>Vice-President and Treasurer of Honeyman Hardware Company</i>	FRANK H. RANSOM.....Portland, Oregon <i>President of Eastern & Western Lumber Company</i>
JOHN A. LAING.....Portland, Oregon <i>Laing Gray & Smith, General Counsel of the Company</i>	R. L. SABIN.....Boring, Oregon <i>Farmer</i>
PAUL B. MCKEE.....Portland, Oregon <i>President of the Company</i>	GUY W. TALBOT.....Portland, Oregon <i>Chairman of the Board of the Company</i>
THEO. B. WILCOX.....Portland, Oregon <i>Vice-President and Treasurer of Wilcox Investment Company</i>	

OFFICERS

PAUL B. MCKEE.....	<i>President</i>
R. G. BARNETT.....	<i>Vice-President and General Manager</i>
E. L. HALL.....	<i>Vice-President and Chief Engineer</i>
HILMAR PAPST.....	<i>Vice-President</i>
C. W. PLATT.....	<i>Secretary and Treasurer</i>
GEORGE MACKENZIE.....	<i>Assistant Secretary and Assistant Treasures</i>

*Transfer Agent
(for Preferred Stocks)*

THE FIRST NATIONAL BANK OF PORTLAND,
Portland, Oregon

*Registrar
(for Preferred Stocks)*

THE UNITED STATES NATIONAL BANK
OF PORTLAND,
Portland, Oregon

TO THE STOCKHOLDERS OF
PORTLAND GAS & COKE COMPANY:

Your Company is pleased to present herewith the report of its operations for 1940, including a balance sheet and statement of income and surplus accounts of the Company, together with certificate of certified public accountants, on pages 9 to 12, and a comparative statement of service and property statistics on page 20.

Highlights of the Company's operations during the past year include the following:

1. Volume of gas sold increased 5.9% and operating revenues from the sale of gas increased 3.3%, compared with 1939.
2. Net profit from the sale of by-products decreased 12.3% largely due to an average temperature which made heating requirements 20% below normal.
3. Total operating revenues of \$3,478,767 were up \$30,744, or 1.5%, over 1939.
4. Net income of \$236,925 was up \$17,252, or 7.9%.
5. Number of gas customers at the year-end was 86,542, an increase of 470 over the previous year.

Revenues and expenses of the Company for 1940, compared with 1939, were as follows:

	1940	1939
Operating Revenues	\$3,478,767	\$3,428,023
Operating Revenue Deductions:		
Operating Expenses, excluding direct taxes	\$2,025,163	\$1,943,843
Direct Taxes	430,030	446,682
Amortization of Limited Term Investments	124	1,892
Property Retirement Reserve Appropriations	275,000	275,000
Total Operating Revenue Deductions	\$2,730,317	\$2,667,417
Net Operating Revenues	\$ 748,450	\$ 760,606
Other Income (Net Debit)	2,280	504
Gross Income	\$ 746,170	\$ 760,102
Interest on Mortgage Bonds	\$ 480,556	\$ 487,250
Other Interest and Deductions	29,617	53,733
Total	\$ 510,173	\$ 540,983
Less Interest Charged to Construction	928	554
Net Interest and Other Deductions	\$ 509,245	\$ 540,429
Net Income	\$ 236,925	\$ 219,673



Operating Revenues

The Company's operating revenues in 1940, compared with 1939, were obtained from the following sources:

	1940	1939
Sale of gas.....	\$3,053,341	\$2,954,407
By-products (net)	355,681	405,544
Other revenue	69,745	68,072
Total.....	\$3,478,767	\$3,428,023

The increase in gas revenues amounted to \$98,934, or 3.3%, as compared with the previous year. The Company's revenues from this source have been increasing gradually, but steadily, every year since 1934. Net profit from the sale of by-products was off \$49,863, or 12.3%, due to a combination of mild weather and other factors discussed later in this report. Total operating revenues of the Company were up \$50,744, or 1.5%.

Operating Expenses

Operating expenses, excluding direct taxes, increased \$31,320, or 4.2%, over 1939, the comparison by classes of expense being as follows:

	1940	1939
Production	\$1,045,670	\$ 993,667
Transmission & Distribution	97,788	95,995
Utilization (Service)	184,007	179,958
Customers Office	228,637	220,524
New Business	261,956	243,346
General	207,105	210,353

Total.....\$2,025,165 \$1,943,843

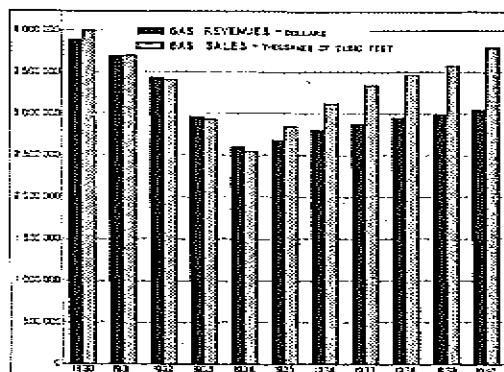
Direct taxes of \$430,030 were down \$16,652, or 3.7%, principally as the result of a decrease in real and personal property taxes.

Interest and Other Deductions

Interest on mortgage bonds was down \$6,694, or 1.4%, due to the retirements provided for in the bond

Seven of the Company's by-products recovered in manufacturing gas are shown above. From left to right: toluol, an ingredient of TNT, now in demand as a national defense material, and also used in the paint industry; chemical sulphur (microsulphur), used in orchards and gardens as an insecticide and fungicide; Gasco roadbinder, a durable surfacing material for highways, streets and airport runways; Gasco briquets, an all-heat no-ash solid fuel that needs stoking only twice a day; naphthalene, used effectively in the control of agricultural and garden pests; xylol, for the paint and lacquer industry; and benzol, which is blended with gasoline to give high-test, anti-knock Gasco Motor Fuel, a product much in demand.

extension sinking fund. Other interest and deductions decreased \$24,116, or 44.9%, as the result of savings in bond discount amortization.



In 1940, for the sixth consecutive year, gas sales and revenues showed an increase over the previous year. Gas sales were greater than for any other year since 1930. Revenues were 3.3% above the 1939 figure.



Net Income and Dividends

The Company's net income for 1940 was \$236,925, an increase of \$17,252, or 7.9%. From this net income a preferred stock dividend at the rate of \$0.87 a share on the 7% Preferred Stock and \$0.75 a share on the 6% Preferred Stock was paid on March 15, 1941. As of December 31, 1940, the amount of undecleared cumulative dividends on the 7% Preferred Stock was \$47.29-2/3 per share, and on the 6% Preferred Stock was \$40.54 per share.

Property Additions

Gross expenditures for property additions in 1940 amounted to \$322,405 which, after giving effect to property retirements, resulted in net additions to property and plant totaling \$225,339. Improvements and additions to the gas works accounted for \$113,322 and expenditures for mains, services and meters totaled \$174,773.

Gas Sales

Total gas sales of 3,792,939,000 cubic feet in 1940 were greater than for any other year since 1930. All classes of gas use showed increases during the year.

The average price received per thousand cubic feet of gas sold in 1940 was 80.5 cents as compared with 82.5 cents in 1939.

The following tabulation shows the percentage increases in 1940 gas sales and revenues by classes:

	% Increase	
	Gas Sales	Revenue
Residential	2.7%	1.7%
Househeating	8.0	6.6
Commercial	9.8	5.7
Industrial	3.4	2.5
Government and Municipal.....	20.6	11.1
Total.....	5.9%	3.3%

Volume of gas sold has shown an increase every year since 1933.

Customer Statistics

As of December 31, 1940, the Company was serving a total of 86,542 customers, an increase of 470 over the previous year and the largest number on its lines since 1931. Distribution of these customers by classes was as follows:

	Number of Customers	Increase Over 1939
Residential (inc. househeating).....	80,279	274
Commercial	5,548	168
Industrial	390	28
Government and Municipal.....	325	0
Total.....	86,542	470

The number of residential space heating customers, including those who also use gas for other domestic purposes, increased 432, or 5.3%, to a total of 8,561. Popularity of automatic gas heating has been growing steadily throughout the territory served.

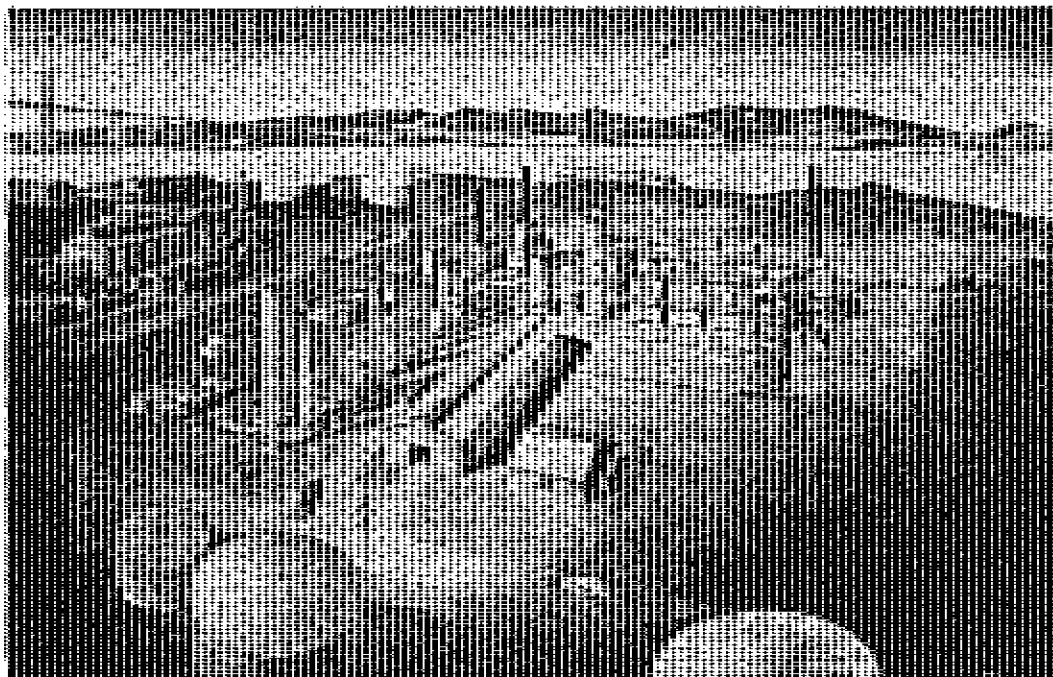
The combined total of commercial, industrial and government and municipal customers at the end of 1940 was the highest in the history of the Company.

By-Products Operations

As has been stated earlier in this report, the Company's 1940 net profit from the sale of by-products showed a decrease in comparison with the previous year. By-products net profit in 1940 amounted to \$355,681, which was \$49,863 less than in 1939.

On a temperature basis, heat requirements in 1940 were 4% below 1939 and 20% below normal, contributing to a 5.3% decrease in the number of tons of Gasco briquets sold. Briquet sales in 1940 totaled 40,143 tons. The continued growth in demand for automatic househeating also is a factor in this market. Late in the year the Company began deliveries of briquets to a new calcium carbide plant in Portland, and with the expansion of electro-chemical activities in the area additional outlets are expected to develop.

Sales of tar for highway surfacing were curtailed in the latter part of the year by a temporary lag in such projects due to lack of funds on the part of road



This preliminary sketch shows the new addition to the Company's plant now in process of design and construction. At the right is the battery of four Knowles coke ovens and at the left is the light oil recovery equipment. The Company's present works are to the left. In addition to 6,000,000 cubic feet of gas per day, the new plant will produce annually about 20,000 tons of petroleum coke, will increase production of benzol, toluol, xylol and tar, and will add solvent naphthas and other new materials to the Company's output.

building agencies. The comparison with the previous year was also affected by the fact that in 1939 large quantities of Gasco roadbinder were sold to surface runways at the new Portland airport. Total sales of 1,148,591 gallons of tar were 24.6% below the 1939 volume.

Benzol sales of 1,776,009 gallons were up 5.5% in volume but as the result of a lower market price the net profit from this business was 7.6% below the previous year.

A new refining process expanded the possibilities for selling naphthalene, and sales of this material totaled 349 tons in 1940 as compared with 179 tons in the previous year. Other by-products sales included 264 tons of chemical sulphur and 170 tons of refined carbon.

Expansion of By-Products Business

For the past several years the Company has been carrying on research and laboratory work in an endeavor to determine the best processes for producing additional profitable by-products in order to increase the Company's revenues. The Company has invested to date approximately \$240,000 in engineering studies, pilot plant construction and operation, laboratory work and other practical studies relating to this phase of the Company's business.

This research work substantiated the commercial

practicability of the development of additional by-products but with a much larger plant investment than the preliminary studies had indicated would be required. In the meantime, recent industrial developments of major significance in the Portland area, due to the advent of large-scale aluminum and other metallurgical enterprises, have created an immediate market for coke produced from petroleum residues, with reasonable assurance of the continuance of demand after the present national defense emergency.

Practical demonstration was made of the feasibility of manufacturing coke from petroleum residues that would satisfy the requirements of the aluminum and other metallurgical industries. Such practical demonstration further indicated that the Company could at the same time achieve the desired increase in its production of other by-products and increase its daily gas manufacturing capacity by 6,000,000 cubic feet. Thorough consideration of the probable benefits to the Company led to the conclusion that it should take advantage of the newly created and other immediately available markets for by-products which the Company could equip itself to supply.

The plant which the Company is now proceeding to install will consist primarily of a four-oven oil coking plant with auxiliary and refining equipment, designed to produce annually approximately 20,000 tons of calcined coke suitable for the manufacture of

electrodes and approximately 3,500,000 gallons of light oils for refining into such compounds as benzol, which is being sold to Shell Oil Company for blending to produce the well-known anti-knock Gasco Motor Fuel; toluol, which is an essential defense material in the manufacture of munitions; and xylol and solvent naphthas, which are used in the manufacture of paints and in processing rubber. It is contemplated that this plant will be in operation by the close of 1941.

With the \$600,000 in cash invested by American Power & Light Company through the purchase of common stock in 1940, and with other available funds, the Company is in a position to finance this program, which is estimated to cost \$1,250,000. While the investment in these plant facilities is somewhat larger than for the program as originally contemplated, it is believed that the ultimate improvement in earnings will demonstrate the economic soundness of the plan adopted.

It should be realized, of course, that the entire country, including the Portland area, is being thrust into a period of economic uncertainty by reason of the international situation, and that no one can predict with any assurance the eventual effect of these conditions upon your Company. However, it is believed that such adjustments as may be necessitated by these conditions will not unduly prejudice the successful operation of the Company's business, including the expanding of the by-products program, in view of the intimate relationship between the products manufactured and to be manufactured at the plant, and the demands for these products not only for immediate National Defense activities but for permanent and basic enterprises and requirements.

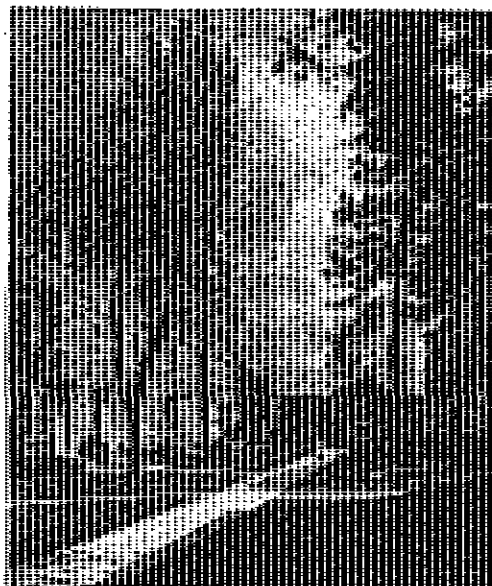
Another factor which has an important influence on the amount of gas and briquets sold by the Company is the variation above or below normal in degree days, and this factor may affect, favorably or unfavorably, the overall results of this major effort to improve earnings. Consideration must also be given to such effects upon earnings as have been and may be caused by increases in uncontrollable expenses, including taxes and prices of materials, which are likely to rise in cost on account of the war and large defense requirements.

Business Development

In active cooperation with gas appliance dealers, the Company continued its vigorous business development program in 1940. Purchases of gas-using appliances by customers totaled approximately \$1,000,000, with 70% of this business being done by co-operating dealers.

The superior performance of modern gas ranges was demonstrated to thousands of women through cooking schools, group meetings and home demonstrations, and many others had opportunity to inspect gas equipment for cooking, water heating, househeating and refrigeration in model homes.

All of the Company's services must be sold in the face of keen competition from other fuels or services,



Gas and modern gas appliances are used for cooking and refrigeration in this new-type Portland apartment house, designed for comfort and convenience. Gas equipment was also favored by the builders of many new homes in the Company's territory during 1940.

and the maintenance of an extensive sales program is essential to the continued progress of its business.

Company Personnel

At the end of 1940 the Company had 704 men and women in its employ. Total payroll for the year, including the by-products division, was \$1,249,495, making the Company one of the major industries in its community.

The service rendered to customers by the members of the Company's organization was of the highest order. In addition, they assisted most effectively in the work of promoting the all-around development of the Company's business.

During the year a number of the Company's employees were called into military service, either as members of the organized reserves or under the selective service training program. In recognition of their contribution to the national defense, the Company has been paying the entire premium on the group life insurance policies of these men and will endeavor to restore them to the same or equivalent positions in the organization upon their return to civil life.

Respectfully submitted,

By Order of the Board of Directors,

PAUL B. MCKEE, *President.*

Portland, Oregon

June 5, 1941.

Accountants' Certificate

PORTLAND GAS & COKE COMPANY:

We have examined the balance sheet of Portland Gas & Coke Company as of December 31, 1940 and the related statement of income and earned surplus for the twelve months ended that date, have reviewed the system of internal control and the accounting procedures of the Company, and have examined or tested its accounting records and other supporting evidence by methods and to the extent we deemed appropriate. We have previously made similar examinations for the years 1932 to 1939, inclusive.

In our opinion, subject to the adequacy of the Company's property retirement reserve appropriations, as to which we are not in a position to express an opinion, the accompanying balance sheet, with its footnotes, and related statement of income and earned surplus fairly present the financial condition of the Company at December 31, 1940 and the results of its operations for the twelve months ended that date, in conformity with generally accepted accounting principles consistently followed by the Company.

HASKINS & SELLS.

Portland, Oregon,
February 17, 1941.

Portland Gas & Coke Company

(Incorporated in Oregon)

Balance Sheet, December 31, 1940

ASSETS

Plant, Property, and Equipment (including intangibles)—Ledger value..... \$22,340,429.61

Investments:

Miscellaneous securities (ledger value).....	\$	207.00	
Non-current receivables		592.14	
Total investments			799.14

Current and Accrued Assets:

Cash in banks—On demand	\$	1,266,359.53	
Special deposits		247,251.22	
Working funds		14,587.45	
Accounts receivable:			
Customers and miscellaneous		617,040.47	
Associated companies		346.53	
Materials and supplies		279,707.23	
Prepayments		10,922.43	
Other current and accrued assets		821.02	
Total current and accrued assets			2,437,035.88

Deferred Debits:

Unamortized debt expense	\$	113,078.90	
Preliminary survey and investigation charges		240,139.56	
Other		1,024.58	
Total deferred debits			354,233.04

Reacquired Capital Stock (595 shares 7% preferred)..... 59,500.00

Total **\$25,192,002.67**

NOTES:

1. Plant, property, and equipment (including intangibles) are stated on the basis of the Company's valuation thereof at acquisition (as adjusted) where acquired by issuance of stocks and other securities, which valuation includes any financing costs related to the issuance of such securities, or on the basis of cost where acquired for cash or constructed, less retirements at actual or estimated cost. The ledger value of plant, property, and equipment (including intangibles) does not purport to represent present realizable values or replacement cost.
2. It has been the general practice of the Company to provide for retirements of property by making such provisions from current income as are considered by the management necessary to provide for retirements when they occur, such provisions being in addition to expenditures included in operating expenses to maintain the properties in condition to render adequate service. The provisions made for retirements do not purport to be calculated on the basis of estimated lives of the individual units of depreciable property.
3. The system of accounts prescribed by regulatory authority provides that a study and reclassification of plant, property, and equipment (including intangibles) shall be made and that depreciation rather than retirement accounting shall be followed. The study by the Company was in progress at December 31, 1940 and 1939 and 1938 it has been completed it is not known to what extent the related accounts may be affected.

Portland Gas & Coke Company

(Incorporated in Oregon)

Balance Sheet, December 31, 1940

LIABILITIES

Capital Stock:

7% preferred, cumulative, \$100.00 par; pari passu with 6% preferred; authorized, 60,000 shares; issued, 64,580 shares	\$ 3,458,000.00
6% preferred, cumulative, \$100.00 par; pari passu with 7% preferred; authorized, 50,000 shares; outstanding, 8,712 shares	871,200.00
Common, no par; authorized, 330,000 shares; outstanding, 311,130 shares	4,113,000.00

Total capital stock \$10,442,200.00

Long-Term Debt (see note 4):

First and refunding mortgage five per cent. gold bonds, due 1940 extended in part to 1950; issued, \$3,424,000.00; less in treasury and pledged as collateral under first lien and general mortgage gold bonds, series of "4-1/2s due 1940" extended in part to 1950, \$2,930,000.00; less reacquired, \$56,000.00; outstanding	\$ 6,488,000.00
First lien and general mortgage gold bonds, series of "4-1/2s due 1940" extended in part to 1950; issued, \$2,930,000.00; less reacquired, \$3,000.00; outstanding	2,927,000.00
Portland Gas Company first mortgage 5% gold bonds, due 1951; issued, \$750,000.00; less in treasury and pledged as collateral under Portland Gas & Coke Company first and refunding mortgage five per cent. gold bonds, due 1940 extended in part to 1950, \$379,000.00; outstanding	371,000.00

Total long-term debt 9,786,000.00

Current and Accrued Liabilities (see note 4):

Accounts payable:	
Associated companies	\$ 16,062.39
Other	169,694.31
Matured interest (cash in special deposits)	13,652.50
Customers' deposits	87,080.20
Taxes accrued	395,463.38
Interest accrued (including \$226,507.50 for which cash is in special deposits)	234,536.67
Other current and accrued liabilities	5,410.95

Total current and accrued liabilities 871,850.40

Deferred Credits 7,383.85

Reserves:

Property retirement	\$ 2,737,483.23
Amortization of limited-term investments	2,171.80
Uncollectible accounts	69,216.12
Inventory adjustment	7,873.46
Injuries and damages	57,929.22

Total reserves 2,874,673.83

Contributions in Aid of Construction 190.00

Earned Surplus (\$1,013,017.22 restricted as to dividends) 1,259,704.59

Total \$25,192,002.67

4. At December 31, 1940 the holders of \$489,000.00 principal amount of first and refunding mortgage five per cent. gold bonds, due 1940 and \$79,000.00 principal amount of first lien and general mortgage gold bonds, series of "4-1/2s due 1940" had not become parties to the Extension Plan and Deposit Agreement dated October 31, 1939 and operative February 27, 1940, which provided for the extension of the bonds to January 1, 1950. This plan also provided, among other things, that a sinking fund be established which will require retirement of \$250,000 principal amount of bonds in each of the years 1941, 1942, and 1943 and \$150,000 principal amount each year thereafter, such requirements to apply ratably to the two issues, as far as practicable. Neither the unextended bonds due in 1940 nor the principal amount of bonds to be reacquired and retired during 1941 pursuant to sinking fund requirements, are included among current liabilities in the foregoing balance sheet.
5. Undeclared cumulative dividends on the 7% and 6% preferred stocks amounted to \$40.19-2/3 and \$34.54 per share, respectively, as of December 31, 1939. No provision has been made in the above statement for undeclared cumulative dividends in the amount of \$2,533,510.15 (\$47.19-2/3 per share) on the 7% preferred stock and \$123,181.03 (\$36.54 per share) on the 6% preferred stock, to December 31, 1940.

Portland Gas & Coke Company

Statement of Income and Earned Surplus For the Twelve Months Ended December 31, 1940

(Statement of income for the twelve months ended December 31, 1939 shown for comparative purposes)

Income

	Twelve Months Ended December 31	
	1940	1939
Operating Revenues	\$3,478,767.18	\$3,428,023.25
Operating Revenue Deductions:		
Operating expenses, excluding direct taxes.....	\$2,025,163.48	\$1,943,842.74
Direct taxes	430,030.28	446,682.00
Amortization of limited-term investments.....	123.78	1,892.07
Property retirement reserve appropriations.....	275,000.00	275,000.00
Total operating revenue deductions	\$2,730,317.54	\$2,667,416.81
Net Operating Revenues	\$ 748,449.64	\$ 760,606.44
Other Income (net debit)	2,270.35	504.25
Gross Income	\$ 746,170.29	\$ 760,102.19
Interest on Mortgage Bonds	\$ 480,555.85	\$ 487,250.00
Other Interest and Deductions	29,616.89	53,733.12
Total	\$ 510,172.74	\$ 540,983.12
Less Interest Charged to Construction	927.51	553.74
Net Interest and Other Deductions.....	\$ 509,245.23	\$ 540,429.88
Net Income	\$ 236,925.06	\$ 219,672.31

NOTE: No provision has been made for Federal excess profits tax since no excess profits are indicated.

Summary of Earned Surplus

Earned Surplus, January 1, 1940 (restricted as to dividends).....	\$1,013,017.22
Add:	
Net income for the twelve months ended December 31, 1940.....	236,925.06
Profit on bonds reacquired (less unamortized debt expense applicable to bonds retired, \$3,118.69)	9,762.31
Earned Surplus, December 31, 1940 (\$1,013,017.22 restricted as to dividends).....	\$1,259,704.59

The Portland Gas & Coke Company Organization*

NAME	OCCUPATION	ADDRESS
Alta, Jeanne A.	Cashier	Hillsboro, Oregon
Allen, John P.	Service Man	Vancouver, Washington
Albertini, Joseph	Service Man	Portland, Oregon
Albright, Edith W.	Credit Clerk	Portland, Oregon
Alderman, Dwight E.	Unit Head, Contract Bureau	Portland, Oregon
Allen, Stanley W.	Sulphur Plant Operator	Portland, Oregon
Anderson, Axel E.	Fitter	Portland, Oregon
Anderson, Clarence W.	Accounting Clerk	Portland, Oregon
Anderson, Charles C.	Mechanic's Helper	Beaverton, Oregon
Anderson, Elton E.	Office Clerk	Altam, Oregon
Anderson, Richard	Foreman	Fairview, Oregon
Andrew, Robert W.	Mechanic	Portland, Oregon
Armstrong, Albert E.	Janitor	Vancouver, Washington
Armstrong, Clifford M.	Service Man	Salem, Oregon
Armstrong, Russell M.	Credit Clerk	Portland, Oregon
Ashbaugh, Ellis D.	Carpenter	Portland, Oregon
Atkinson, Wallis H.	Residential Salesman	Lebanon, Oregon
Babcock, Blair A.	Accounting Clerk	Portland, Oregon
Bailey, Robert L.	Fitter's Helper	Salem, Oregon
Bailey, Thomas H.	District Manager	Hillsboro, Oregon
Baker, Winifred	Bookkeeping Clerk	Portland, Oregon
Baker, Thorsvald Martin	Conveyorman	Portland, Oregon
Baranco, Umberto B.	Laborer	Portland, Oregon
Barnaby, William	Fireman	Portland, Oregon
Barber, Frank S.	Fitter	Portland, Oregon
Barbero, Mike	Laborer	Portland, Oregon
Barger, Hessa	Brigade Lumper	Portland, Oregon
Barnett, R. G.	Vice-president and General Manager	Portland, Oregon
Barnicot, Joseph D.	Service Man	Portland, Oregon
Battle, Melvin K.	Residential Salesman	Portland, Oregon
Baughman, E. C.	Motor Repairman	Portland, Oregon
Bayley, Donald E.	Gasmaker	Portland, Oregon
Bayley, Warren E.	Fitter's Helper	Portland, Oregon
Beckhold, Harold J.	Bill Deliverer	Portland, Oregon
Beerman, Leonard M.	Fitter's Helper	Portland, Oregon
Beerman, Max P.	Fitter's Helper	Portland, Oregon
Belworthy, Elizabeth J.	Stenographer	Portland, Oregon
Bennett, Jack	Sulphur Plant Operator	Portland, Oregon
Benson, Donald	Fitter's Helper	Salem, Oregon
Benson, Harold R.	Bill Deliverer	Portland, Oregon
Bentley, William C.	Brigade Salesman	Portland, Oregon
Bergvik, Leif	District Manager	Salem, Oregon
Biancone, Amedeo	Yardman	Portland, Oregon
Bigness, Halman	Power House Operator	Portland, Oregon
Bigot, Joseph L.	Mechanic	Portland, Oregon
Bingham, Hubert W.	Painter	Portland, Oregon
Black, Lawrence J.	Fireman	Portland, Oregon
Black, Ruth	Bookkeeping Clerk	Portland, Oregon
Black, Warren T.	Residential Salesman	Portland, Oregon
Blake, James J.	Bookkeeper	Portland, Oregon
Boersch, H. M.	Residential Salesman	Salem, Oregon
Bonadurer, John J.	Pre Milling Clerk	Portland, Oregon
Borovich, John	Conveyorman	Portland, Oregon
Bostrom, Gus J.	Light Oil Plant Operator	Portland, Oregon
Boswell, Frank J.	Laborer	Portland, Oregon
Bowe, H. T.	Fireman	Portland, Oregon
Braithwaite, James H.	Brickmason	Portland, Oregon
Briggs, Allyn M.	Cashier	Vancouver, Washington
Brockshire, Ernest	Custodian Man	Portland, Oregon
Brockshire, Irwin N.	Merchandise Clerk	Portland, Oregon
Brockhouse, Thomas G.	Service Man	Hillsboro, Oregon
Brooks, William O.	Fitter	Portland, Oregon
Buoye, Carl A.	Industrial Salesman	Orwigo, Oregon
Burke, Richard	Contract Clerk	Portland, Oregon
Burlingame, Clifford D.	Foreman	Gresham, Oregon
Burlingame, Glenn D.	Fitter's Helper	Portland, Oregon
Bursella, Harry	Assistant to Secretary-Treasurer	Portland, Oregon
Butler, Guy H.	Laboratory Assistant	Portland, Oregon
Butler, Willford E.	Service Clerk	Orwigo, Oregon
Butson, George W.	Service Man	Orwigo, Oregon
Butts, George R.	Laborer	Portland, Oregon
Butzlaff, Paul F.	Gasmaker	Portland, Oregon
Buyers, Donald E.	Efficiency Engineer	Portland, Oregon
Cady, W. J.	Order Clerk	Portland, Oregon
Caldwell, Sidney E.	Rate Supervisor	Portland, Oregon
Calhoun, Eda G.	Supervisor Home Service Division	Portland, Oregon
Callins, Levi S.	Janitor	Hillsboro, Oregon
Calliff, Raymond	Painter	Portland, Oregon
Calliff, W. C.	Foreman	Portland, Oregon
Calouri, Theodore P.	Service Man	Portland, Oregon
Calouri, Vernon B.	Accounting Clerk	Portland, Oregon
Centrell, Guy L.	Residential Salesman	Portland, Oregon
Cavall, E. M.	Construction Engineer	Portland, Oregon
Carlson, A. L.	Scalifician	Portland, Oregon
Carlson, Carl E.	Conveyorman	Portland, Oregon
Carlson, Gertrude L.	Comptometer Operator	Portland, Oregon
Carr, C. C.	Brigade Sales Supervisor	Portland, Oregon
Carr, Harvey B.	Foreman	Portland, Oregon
Carter, Melvin B.	Fireman	Vancouver, Washington
Casey, Michael J.	Office Clerk	Portland, Oregon
Chamberlain, Florence	Cash Teller	Portland, Oregon
Chambers, A. B.	Industrial Salesman	Portland, Oregon

*In the regular employ of the Company on March 1, 1941.

NAME	OCCUPATION	ADDRESS
Chase, C. L.	Sales Floor Supervisor	Portland, Oregon
Chatty, Ariel B.	Highest Service Inspector	Portland, Oregon
Church, Lionel W.	Printing Clerk	Portland, Oregon
Clegg, Lloyd A.	Accounting Clerk	Portland, Oregon
Clark, Albert C.	Recessing Engineer	Portland, Oregon
Clark, William P.	Accounting Clerk	Portland, Oregon
Clarke, Clara B.	Accounting Clerk	Portland, Oregon
Clarke, Wilbur	Truck Driver	Portland, Oregon
Claybourne, Norman	Contract Clerk	Portland, Oregon
Cleveland, Bertha P.	Collection Clerk	Portland, Oregon
Clinton, Hal M.	Foreman	Portland, Oregon
Cobb, R. W.	Customer Man	Portland, Oregon
Cochran, Nancy	Stenographer	Portland, Oregon
Cochran, Rowena	Accounting Clerk	Portland, Oregon
Coe, Terry L.	Shoemaker	Portland, Oregon
Coffey, Howard G.	Operating Clerk	Portland, Oregon
Cole, Robert D.	Unit Head, Contract Bureau	Portland, Oregon
Colpart, Angelus J.	Shoemaker	Portland, Oregon
Conner, Patrick O.	Serviceman	Portland, Oregon
Conway, Terrance J.	Meter Reader	Portland, Oregon
Cook, John L.	Gasmaker	Portland, Oregon
Cook, Robertson	Service Engineer	Portland, Oregon
Cooke, Leslie R.	Meter Entry Clerk	Portland, Oregon
Corcoran, Margaret	Stenographer	Portland, Oregon
Curwin, Blanche G.	Cashier	Hillsboro, Oregon
Costanzo, Pete B.	Filter	Portland, Oregon
Cornwell, D. C.	Meter Reader	Portland, Oregon
Coward, Vera A.	Office Clerk	Salem, Oregon
Coyne, Max E.	Janitor	Hillsboro, Oregon
Cumming, Grahame E.	Bookkeeping Clerk	Portland, Oregon
Cummins, C. V.	Meter Entry Clerk	Portland, Oregon
Curry, Daniel H.	Meter Prover	Portland, Oregon
Curry, Lester	Maintenance Clerk	Portland, Oregon
Curry, William A.	Light Oil Plant Operator	Portland, Oregon
Cutie, Ira	Truck Driver	Vancouver, Washington
Curtis, J. E.	Meter Repairman	Portland, Oregon
Cutter, John K.	Office Clerk	Portland, Oregon
Dahl, Donald D.	Filter	Lake Grove, Oregon
Darles, Stuart W.	Residential Salesman	Portland, Oregon
Davis, Chester E.	Laborer	Silverton, Oregon
Davis, Katherine	Comptometer Operator	Portland, Oregon
Deitch, Roxana D.	Laborer	Portland, Oregon
Deitch, Virgil C.	Serviceman	Fairview, Oregon
Delcor, F. J.	Meter Repairman	Portland, Oregon
Dempster, E. V.	Unit Head, Bookkeeping Bureau	Portland, Oregon
Dennis, William E.	Filter	Portland, Oregon
Denton, Walter J.	Gasmaker	Portland, Oregon
Detteridge, Harry	Foreman	Portland, Oregon
De Vaux, Genevieve	Stenographer	Portland, Oregon
Diamond, Charles E.	Residential Sales Supervisor	Portland, Oregon
Dickey, Charles F.	Gasmaker	Portland, Oregon
Dickey, W. H.	Foreman	Portland, Oregon
Dierdorff, John	Advertising Supervisor	Portland, Oregon
Diller, Earl	Serviceman	Portland, Oregon
Dixon, David	Laborer	Portland, Oregon
Doane, Eunice G.	Saleswoman	Portland, Oregon
Dodd, Joseph A. H.	Supervisor, Credit Collection Bureau	Portland, Oregon
Doerfler, Irene	Comptometer Operator	Portland, Oregon
Dorigan, John P.	Laborer	Portland, Oregon
Downing, Frank R.	Serviceman	Portland, Oregon
Doye, Ira J.	Residential Salesman	Vancouver, Washington
Duffy, Lawrence E.	Operating Clerk	Portland, Oregon
Durdale, Robert E.	Chief Clerk	Hillsboro, Oregon
Durzan, William M.	Industrial Salesman	Portland, Oregon
Duncan, Lewis	Unit Head, General Accounting Bureau	Portland, Oregon
Dunford, David H.	Meter Reader	West Salem, Oregon
Dunne, Marian A.	Home Economist	Portland, Oregon
Eber, Wesley C.	Mail Clerk	Portland, Oregon
Edgell, Lloyd	Foreman	Salem, Oregon
Edmonds, A. B.	Foreman	Portland, Oregon
Edmonds, Ernest E.	Division Foreman	Portland, Oregon
Edwards, Earl B.	Power House Operator	Portland, Oregon
Ehrke, Fred J.	District Agent	Cervellia, Oregon
Ekland, Virginia G.	Saleswoman	Portland, Oregon
Elkins, Verna E.	Telephone Operator	Portland, Oregon
Elliot, Robert B.	Sales Promotion Manager	Portland, Oregon
Emery, William A.	Electric Welder	Portland, Oregon
Engen, Emil	Meter Reader	Portland, Oregon
England, Eugene D.	Bolt Puller	Portland, Oregon
Ensminger, Philip J.	Serviceman	Portland, Oregon
Ernst, Peter J.	Comptometer	Portland, Oregon
Ervin, H. O.	Cashier	Portland, Oregon
Eub, Virginia	Electric Machine Operator	Portland, Oregon
Evanson, Fred	Operating Clerk	Salem, Oregon
Everett, Carrie E.	Utility Clerk	Portland, Oregon
Falconer, Anne	Stenographer	Portland, Oregon
Farmer, Donald E.	Chief Clerk, Utilization Bureau	Portland, Oregon
Faul, Frank S.	Meter Reader	Newbury, Oregon
Fenn, Jake J.	Gasmaker	Portland, Oregon
Ferguson, David	Accountant	Portland, Oregon
Festis, Dorothy	Cashier	Oregon City, Oregon
Finley, Paul F.	Inspector	Portland, Oregon
Finley, A. E.	Installation Engineer	Portland, Oregon
Fisher, John	Operating Clerk	Portland, Oregon
Flanders, Raphael J.	Gasmaker	Portland, Oregon
Fleming, Theodore R.	Filter's Helper	Portland, Oregon
Fontana, Ennio	Porter	Portland, Oregon
Forster, Allen D.	Laborer	Portland, Oregon
Forster, Frank	Mechanic	Portland, Oregon
Forster, Raymond J.	Filter	Portland, Oregon
Fox, Burton C.	Customer Man	Portland, Oregon
Fraser, George	Serviceman	Portland, Oregon

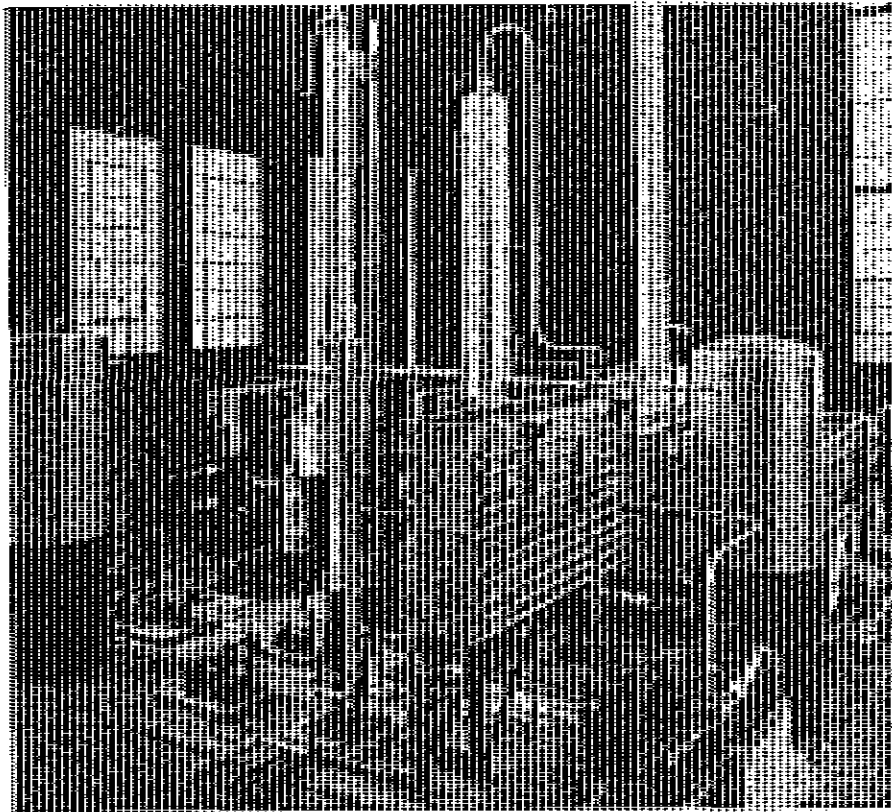
NAME	OCCUPATION	ADDRESS
Franklin, Claude B.	Laborer	Portland, Oregon
Franklin, William B. Jr.	Bookkeeping Clerk	Portland, Oregon
Fraser, H. H.	Bookkeeping Clerk	Portland, Oregon
Fresland, Harvey F.	Residential Salesman	Portland, Oregon
French, Charles Mead	Operating Clerk	Portland, Oregon
Freddie, Frederick	Repaismen	Portland, Oregon
Frink, Robert L.	Light Oil Plant Operator	Portland, Oregon
Furman, Edward P.	Residential Salesman	Oswego, Oregon
Gallo, Sam	Fitter's Helper	Portland, Oregon
Galloway, Maymie	Bookkeeping Clerk	Beaverton, Oregon
Gaudin, Henry	Laborer	Portland, Oregon
Gauke, Ben F.	Residential Salesman	Portland, Oregon
Gaylord, Harry B.	Paymaster	Portland, Oregon
Geaz, Ray L.	Meter Reader	Portland, Oregon
Gehmer, Leon E.	Electric Welder	Portland, Oregon
George, Anna G.	Comptometer Operator	Vancouver, Washington
Grebell, Ina May	Comptometer Operator	Portland, Oregon
Gleason, Corlantino	Filter	Portland, Oregon
Gilman, Lyle	Meter Repairman	Portland, Oregon
Gildemeister, J. V.	Meter Reader	Portland, Oregon
Gillman, Luther Wilson	Stenographer	Portland, Oregon
Gilman, Lloyd L.	Loader	Portland, Oregon
Gillman, Ralph R.	Foreman	Portland, Oregon
Goodman, Russell E.	Chemist	Portland, Oregon
Goette, Domenico E.	Fitter's Helper	Portland, Oregon
Goyt, Richard A.	Brigant Lumper	Beaverton, Oregon
Grants, Carolyn E.	Typist	Portland, Oregon
Grant, James H.	Fitter's Helper	Portland, Oregon
Gray, Paul F.	Apartment House Salesman	Portland, Oregon
Gray, Ruth	Telephone Operator	Portland, Oregon
Grauer, Lee S.	Repaismen	Portland, Oregon
Gresham, Mary Alice	Stenographer	Portland, Oregon
Griffith, C. V.	Supervisor, General Accounting Bureau	Portland, Oregon
Grober, Kurt	Gasmaker	Portland, Oregon
Gross, Ralph W.	Credit Man	Vancouver, Washington
Guffroy, C. H.	Assistant to the President	Portland, Oregon
Gunn, John	Meter Reader	Portland, Oregon
Gustafson, Lloyd W.	Pump Operator	Portland, Oregon
Hagg, Bertha C.	Office Clerk	Oregon City, Oregon
Hackitt, Robert N.	Housekeeping Salesman	Portland, Oregon
Haines, Drew Orr.	Stenographer	Portland, Oregon
Hall, E. L.	Vice-president and Chief Engineer	Portland, Oregon
Hallack, H. W.	Stores Accounting Clerk	Portland, Oregon
Hamilton, Lucile A.	Gasmaker	Portland, Oregon
Hanson, Harvey G.	Bill Deliverer	Portland, Oregon
Hanson, Otto	Laborer	Portland, Oregon
Hardisty, Charles E.	Fitter	Portland, Oregon
Hardisty, Robert J.	Gasmaker	Portland, Oregon
Hari, Herman	Serviceman	Albion, Oregon
Harkins, Fred J.	Dispatcher	Portland, Oregon
Harland, Willoughby F.	Gasmaker	Portland, Oregon
Hart, F. V.	Mechanic	Portland, Oregon
Harvey, John H.	Fireman	Portland, Oregon
Hausser, Edward P.	Serviceman	Portland, Oregon
Havercroft, Grace M.	Comptometer Operator	Portland, Oregon
Hawth, Holly	Generator Cleaner	Portland, Oregon
Hays, Jesse E.	Mechanic	Albion, Oregon
Haywood, C. I.	Inventory Clerk	Portland, Oregon
Healy, C. E.	Industrial Salesman	Portland, Oregon
Heckberg, Irene E.	Stenographer	Portland, Oregon
Heckberg, Margaret R.	Office Clerk	Portland, Oregon
Heighon, Cyril A.	Bookkeeping Clerk	Portland, Oregon
Heinrichs, William I.	Welder	Portland, Oregon
Heinix, Robert M.	Truck Driver	Tigard, Oregon
Heisen, George	Light Oil Plant Operator	Clackamas, Oregon
Hemrich, Martha	Stenographer	Portland, Oregon
Herman, Mary V.	Home Economist	Portland, Oregon
Hiett, Erman B.	Gasmaker	Portland, Oregon
Hiersche, Louis J.	Mechanic	Portland, Oregon
Hill, Beale A.	Cashier	Vancouver, Washington
Hill, Robert F.	Mechanic's Helper	Portland, Oregon
Hilke, John T.	Service Clerk	Portland, Oregon
Hobson, Louise F.	Stenographer	Newberg, Oregon
Hoeft, Albert	Helper	Portland, Oregon
Hoeft, Augusta A.	Bookkeeping Clerk	Portland, Oregon
Hof, Suzanne	Home Economist	Portland, Oregon
Hoff, Arthur William	Pulverizer Operator	Portland, Oregon
Holten, Cyril E.	Collector	Portland, Oregon
Holmgren, E. E.	Unit Head, Collection Bureau	Portland, Oregon
Hepper, Edward L.	Unit Head, Credit Bureau	Portland, Oregon
Horn, Ted W.	Gasmaker	Portland, Oregon
Horsing, Leonard G.	Fitter	Portland, Oregon
Hougen, Harold D.	Operating Clerk	Portland, Oregon
Howard, C. J.	Foreman	Portland, Oregon
Higgins, Harold P.	Residential Salesman	Portland, Oregon
Hickson, Carl H.	Tool Repairman	Beaverton, Oregon
Hunt, Ernie E.	Fitter's Helper	Portland, Oregon
Irvine, Ralph J.	Residential Salesman	Milwaukie, Oregon
Ist, Louis	Brigant Lumper	Portland, Oregon
Jackson, Carl V.	Gasmaker	Portland, Oregon
Jackson, Hing H.	Foreman	Portland, Oregon
Jaques, William J.	Gasmaker	Portland, Oregon
James, Gertrude M.	Stenographer	Portland, Oregon
Jarvis, James M.	Serviceman	Portland, Oregon
Jarvis, William H.	Office Clerk	Portland, Oregon
Jennings, George T.	Meter Repair Foreman	Portland, Oregon
Jensen, Orville M.	Gasmaker	Portland, Oregon
Jeppesen, Joppe J.	Gasmaker	Portland, Oregon
Jerman, William L.	Fitter	Portland, Oregon
Jernander, R. B.	Cashier Man	Portland, Oregon
Johanson, Clarence Howard	Pulverizer Operator	Portland, Oregon

NAME	OCCUPATION	ADDRESS
Johnson, C. L.	Briquet Salesman	Portland, Oregon
Johnson, Carl	Painter	Portland, Oregon
Johnson, Charles M.	Serviceman	Portland, Oregon
Johnson, C. R.	Briquet Sales Manager	Portland, Oregon
Johnson, Dorothy	Secretary to President	Portland, Oregon
Johnson, Edward H.	Collector	Salem, Oregon
Johnson, Fred J.	Loader	Portland, Oregon
Johnson, Roger Lloyd	Residential Salesman	Vancouver, Washington
Johnson, Donald M.	Advertising Clerk	Portland, Oregon
Johnson, Orville	Dispatcher	Portland, Oregon
Jones, Giff I.	Housewiring Salesman	Portland, Oregon
Jones, James L.	Meter Repairman	Milwaukie, Oregon
Jones, Webster A.	Advertising Assistant	Oswego, Oregon
Kemp, William	Tool Repairman	Portland, Oregon
Kane, Robert J.	Residential Salesman	Portland, Oregon
Kaser, Alvin E.	Foreman	Grainham, Oregon
Kaufman, Alva A.	Residential Sales Supervisor	Portland, Oregon
Keating, Leo G.	Order Clerk	Portland, Oregon
Kelley, Duane S.	Laboratory Engineer	Portland, Oregon
Kelley, George H.	Industrial Salesman	Portland, Oregon
Kelly, E. L.	Industrial Salesman	Portland, Oregon
Kemp, George	Truck Driver	Portland, Oregon
Kendrick, Clarence	Residential Salesman	West Linn, Oregon
Kent, Frank	Foreman	Grainham, Oregon
Kene, Kenneth W.	Residential Salesman	Portland, Oregon
Kinsaid, Trevor M.	Engineering Clerk	Portland, Oregon
Kinder, Howard W.	New Construction Sales Coordinator	Portland, Oregon
Kindler, Wendell E.	District Manager	Vancouver, Washington
Kirchner, Kenneth J.	Serviceman	Portland, Oregon
Klindt, Vincent	Laborer	Portland, Oregon
Koch, Robert A.	Loader	Portland, Oregon
Koenig, John P.	Office Clerk	Salem, Oregon
Koehler, Alfred	Serviceman	Portland, Oregon
Kouba, Ben F.	Operating Clerk	Portland, Oregon
Kowalski, M. H.	Chief Clerk, Operating Department	Portland, Oregon
Kreidt, Leon F.	Residential Salesman	Beaverton, Oregon
Krueger, Leo	Heating Engineer	Portland, Oregon
Lacey, Margaret K.	Office Clerk	Portland, Oregon
Ladd, Lillian	Office Clerk	Corvallis, Oregon
La Mar, Claire	Shoveler	Portland, Oregon
La Mar, Fred	Serviceman	Portland, Oregon
Lancefield, W. Paul	Customer Man	Portland, Oregon
Landsverk, C. I.	Chain Agent	Oak Grove, Oregon
Lang, Agnes E.	Communications Operator	Portland, Oregon
Lang, Roy B.	Serviceman	Portland, Oregon
Lankow, Edward H.	Serviceman	Portland, Oregon
Larson, B. B.	Superintendent, Distribution Bureau	Portland, Oregon
Larson, Walter	Chief Clerk	Salem, Oregon
Laudig, Bert E.	Serviceman	Portland, Oregon
Lavey, Donald G.	Engineer	Portland, Oregon
Lawrence, J. E.	Inspector	Portland, Oregon
Leary, Paul F.	Supervisor, Contract Bureau	Portland, Oregon
Ledbury, Alfred J.	Pulverizer Operator	Portland, Oregon
Lee, Ah	Laborer	Portland, Oregon
Lee, H. A.	Superintendent, Supply Bureau	Portland, Oregon
Lee, John T.	Ship Pump Operator	Milwaukie, Oregon
Leech, A. O.	Industrial Sales Manager	Portland, Oregon
Leet, Helen	Communications Operator	Portland, Oregon
Lehman, John K.	Gas Engineer	Portland, Oregon
Lehman, John	Shoveler	Vancouver, Washington
Lehninger, Glen E.	Dealer Sales Coordinator	Portland, Oregon
Leper, Geo. W.	Foreman	Portland, Oregon
Leis, Adam H.	Fireman	Portland, Oregon
Lembarth, Arthur W.	Serviceman	Portland, Oregon
Leske, Harry R.	Briquet Lumbar	Albion, Oregon
Lewis, Walter L.	Pressman	Portland, Oregon
Lisow, R. E.	Chemist	Portland, Oregon
Lisowski, Dorothy C.	Telephone Operator	Portland, Oregon
Lisak, Edgar	Unit Head, Bookkeeping Bureau	Portland, Oregon
Lindberg, Roy	Meter Reader	Portland, Oregon
Linton, W. C.	Collector	Portland, Oregon
Livestock, George G.	Collector	Portland, Oregon
Livestock, Hamilton A.	Draftsman	Portland, Oregon
Livestock, George W.	Butcher's Helper	Portland, Oregon
Loder, Kenneth	Sewerworker	Portland, Oregon
Loren, Willard L.	Bookkeeping Clerk	Portland, Oregon
Lore, Robert E.	Pufferman	Portland, Oregon
Lord, Andrie L.	Remitt	Portland, Oregon
Lutley, Daniel C.	Storekeeper	Portland, Oregon
Lynskey, James O.	Storekeeper	Portland, Oregon
Lynskey, Evelyn	Accounting Clerk	Portland, Oregon
Lynskey, Brooks	Shoveler	Portland, Oregon
Lynch, James H.	Order Clerk	Portland, Oregon
Mack, S. A.	Dealer Sales Coordinator	Portland, Oregon
Mace, W. E.	Foreman	Portland, Oregon
Mack, Lawrence E.	Gasmaker	Portland, Oregon
Mack, R. H.	Store Helper	Portland, Oregon
Mackenzie, G. E.	Assistant Secretary and Assistant Treasurer	Portland, Oregon
Mackey, Charles E.	Repairman	Portland, Oregon
Maffi, Steve	Joiner	Portland, Oregon
Mazzer, John F.	Pay Station Clerk	Oak Grove, Oregon
Mayer, Francis Harold	Mechanic's Helper	Portland, Oregon
Mayer, Robert E.	Sales Supervisor	Salem, Oregon
Makris, Angelo	Fitter	Portland, Oregon
McLone, Edward D.	Serviceman	Portland, Oregon
Manson, J. H.	Merchandise Bookkeeper	Portland, Oregon
Manson, L. J.	Accountant	Portland, Oregon
Martello, Joe	Meter Reader	Beaverton, Oregon
Martens, Matthew J.	Serviceman	Salem, Oregon
Marshall, Jack L.	Fireman	Portland, Oregon
Matka, John P.	Conveyorman	Portland, Oregon
Matthell, V. G.	Meter Repairman	Portland, Oregon

NAME	OCCUPATION	ADDRESS
Martens, Fred E.	Briquet Lumper	Portland, Oregon
Martens, Ruth	Typist	Portland, Oregon
Martinez, Justina C.	Gasmaier	Portland, Oregon
Mayfield, Willard J.	Mechanic	Portland, Oregon
McBroom, Gerald R.	Serviceman	Portland, Oregon
McCaum, John D.	Serviceman	Portland, Oregon
McClair, Henry	Laborer	Salem, Oregon
McClure, Marshall J.	Gasmaier	Portland, Oregon
McGillough, Willis H.	Foreman	Portland, Oregon
McGurly, Margaret A.	Stenographer	Portland, Oregon
McGinnis, James William	Laborer	Portland, Oregon
McKay, Constance L.	Office Clerk	Woodburn, Oregon
McKay, W. R.	District Agent	Albany, Oregon
McKee, Paul B.	President	Portland, Oregon
McKimmie, George	Meter Reader	Vancouver, Washington
McLean, Angus R.	Foreman	Alsea, Oregon
McLean, Frederick H.	Foreman	Alsea, Oregon
McMartin, Guy D.	Filter	Portland, Oregon
McNichols, Marty J.	Gasmaier	Portland, Oregon
Mealy, Albert B.	Dehydratorman	Portland, Oregon
Medak, John D., Jr.	Meter Reader	Portland, Oregon
Meeker, Hans E.	Telephone Operator	Portland, Oregon
Mejdel, John G.	Mechanic	Portland, Oregon
Meegs, Elmer William	Service Clerk	Portland, Oregon
Merrill, E. R.	Supervisor	Portland, Oregon
Meyer, Edward	Residential Salesman	Portland, Oregon
Meyers, Henry M.	Serviceman	Milwaukie, Oregon
Nicholson, Erice V.	Mechanic	Portland, Oregon
Nikolai, I. John	Mechanic	Portland, Oregon
Niles, Alice G.	Ballroom Typist	Portland, Oregon
Miller, Andrew T.	Bookkeeping Clerk	Portland, Oregon
Miller, G. R.	Superintendent, Utilization Bureau	Portland, Oregon
Miller, David E.	Serviceman	Portland, Oregon
Miller, Frank J.	Residential Salesman	Portland, Oregon
Miller, Fred A.	Serviceman	Portland, Oregon
Miller, Gertrude H.	Telephone Operator	Portland, Oregon
Miller, William K.	Gasmaier	Portland, Oregon
Mills, M. Pierre	Gasmaier	Portland, Oregon
Miller, Frances	Accounting Clerk	Portland, Oregon
Minico, Jack J.	Mechanic	Portland, Oregon
Mittell, Ozz C.	Filter	Albany, Oregon
Mitchell, George O.	Office Clerk	Portland, Oregon
Mitchell, William A.	Encoder	Portland, Oregon
Monlux, William I.	Serviceman	Salem, Oregon
Monroe, Orion G.	Outside Mixer	Portland, Oregon
Monroe, Raymond J.	Pump Operator	Portland, Oregon
Moore, Claude H.	Filter's Helper	Portland, Oregon
Moore, Gerald H.	Station Operator	Portland, Oregon
Moore, Ivan G.	Chief Clerk, Distribution Bureau	Portland, Oregon
Moore, Oscar Lyle	Welder	Salem, Oregon
Moore, Robert C.	Serviceman	Vancouver, Washington
Morgan, Dana N.	Meter Repairman	Oregon, Oregon
Morgan, Frank	Serviceman	Ardenwald, Oregon
Morgan, John O.	Gasmaier	Portland, Oregon
Morrow, Frank	Meter Reading Clerk	Portland, Oregon
Morton, Frank H.	Carpenter	Vancouver, Washington
Mosman, Fred W.	Mechanic	Portland, Oregon
Mugger, Glen R.	Foreman	Portland, Oregon
Murphy, Burton	Chief Clerk	Vancouver, Washington
Musilli, Ernesto	Laborer	Portland, Oregon
Nazki, F. L.	Attorney	Portland, Oregon
Nelson, Thos. D.	Residential Salesman	Hillboro, Oregon
Neely, Joe	Foreman	Albany, Oregon
Neill, Will T.	Supervisor, Rate Department	Portland, Oregon
Nelson, Arthur E.	Truck Driver	Portland, Oregon
Nelson, Emil G.	Light Oil Plant Operator	Portland, Oregon
Nelson, Raymond F.	Mechanic's Helper	Portland, Oregon
Newcomb, Tess B.	Billing Machine Operator	Portland, Oregon
Newton, Albert A.	Field Equipment Operator	Garden Home, Oregon
Nieders, C. E.	Cost Engineer	Molokah, Oregon
Niemi, William	Filter	Amity, Oregon
Nollach, Dallas E.	Order Clerk	Portland, Oregon
Nonken, Phillip S.	Serviceman	Corvallis, Oregon
Oberman, Nick A.	Carpenter	Portland, Oregon
Oliver, Bert J.	Filterman	Portland, Oregon
Olson, Carl I.	Sulphur Plant Operator	Portland, Oregon
Olson, Loren E.	Briquet Lumper	Portland, Oregon
Olson, Otto A.	Garage Foreman	Portland, Oregon
Ornduff, John L.	Truck Driver	Milwaukie, Oregon
Orr, Elmer B.	Mechanic's Helper	Portland, Oregon
Owen, John H.	Fireman	Portland, Oregon
Owens, Neil	Janitor	Salem, Oregon
Pappasodoro, Rocco	Filter's Helper	Portland, Oregon
Papst, Hilmar	Vice-President	Portland, Oregon
Parisi, Gulgienne	Filter's Helper	Portland, Oregon
Parkin, Herbert	Meter Repairman	Portland, Oregon
Parzerini, Joseph	Purifierman	Portland, Oregon
Payne, Ruthvin A.	Painter	Portland, Oregon
Petersen, Chester M.	Pump Operator	Portland, Oregon
Petersen, Jens C.	Maintenance Mac	Portland, Oregon
Petersen, Guy L.	Foreman	Portland, Oregon
Petrone, Antonio	Laborer	Portland, Oregon
Peyrafana, Amelie Y.	Office Clerk	Portland, Oregon
Pfouts, Frank C.	Residential Salesman	Portland, Oregon
Platt, C. W.	Secretary and Treasurer	Portland, Oregon
Pogge, Ralph M.	Foreman	Milwaukie, Oregon
Polen, Kenneth C.	Holder Repairman	Portland, Oregon
Porter, Loyal R.	Pulverizer Operator	Portland, Oregon
Powell, John W.	Appliance Repairman	Portland, Oregon
Precht, Carlo	Laborer	Portland, Oregon
Price, Conrad H.	Electrician	Portland, Oregon
Purpo, Antonio G.	Repairman	Portland, Oregon
Purpo, Frank	Head Generator Cleaner	Portland, Oregon

NAME	OCCUPATION	ADDRESS
Rudak, Gretchen I.	Observation Clerk	Portland, Oregon
Rugan, Durward B.	Filter	Portland, Oregon
Rainer, Howard E.	Serviceman	Portland, Oregon
Rand, Ernest D.	Shovel	Portland, Oregon
Reedick, Joseph G.	Construction Engineer	Milwaukie, Oregon
Reese, Sidney B.	Residential Salesman	Portland, Oregon
Reichlein, Emmett	Addressograph Operator	Portland, Oregon
Reincke, Conrad	Meter Reader	Milwaukie, Oregon
Reich, D. H.	Meter Reader	Portland, Oregon
Reinken, John	Accounting Clerk	Portland, Oregon
Reinert, Gertrude	Stenographer	Portland, Oregon
Reverman, Frank J.	Supervisor, Bookkeeping Bureau	Portland, Oregon
Rhodes, Melana	Stenographer	Portland, Oregon
Rhodes, Shelby	Addressograph Operator	Portland, Oregon
Rice, Robert L.	Residential Salesman	Hillboro, Oregon
Richter, Edward J.	Fireman	Portland, Oregon
Richter, Claude	Filter	Salem, Oregon
Ridley, Dean W.	Stenographer	Portland, Oregon
Ridolfi, Ferdinand	Station Operator	Portland, Oregon
Ridgdon, G. E.	Briquet Salesman	Portland, Oregon
Riggins, Albert M.	Power House Operator	Portland, Oregon
Riley, Frank V.	Serviceman	Portland, Oregon
Riley, James W.	Shop Clerk	Salem, Oregon
Rizzardi, Louis	Conveyorman	Portland, Oregon
Roach, Jack H.	Residential Salesman	Portland, Oregon
Robson, Joseph G.	Bill Deliverer	Portland, Oregon
Rohde, Freda	Bookkeeping Clerk	Portland, Oregon
Root, Leo	Laborer	Portland, Oregon
Rosenman, Emil E.	Serviceman	Portland, Oregon
Ross, Alfred C.	Chemist	Portland, Oregon
Rude, Harold	Mechanic	Portland, Oregon
Rude, Palmer	Construction Foreman	Portland, Oregon
Ruff, William	Fireman	Portland, Oregon
Rush, William H.	Operating Clerk	Portland, Oregon
Russell, Burr R.	Residential Salesman	Salem, Oregon
Rutqvist, Harry C.	Chief Clerk, Commercial Department	Portland, Oregon
Ryan, Helen A.	Office Clerk	Portland, Oregon
Ryan, John C.	General Foreman	Portland, Oregon
Rydzman, A. Lester	Chief Meter Entry Clerk	Portland, Oregon
Sahlsten, D. J.	Foreman	Portland, Oregon
Salling, Jay, Jr.	Residential Salesman	Salem, Oregon
Salter, Robert H.	Briquet Lumper	Portland, Oregon
Sarver, A. W.	Office Clerk	Portland, Oregon
Scanlan, Madge	Assistant Cashier	Portland, Oregon
Schier, August W.	Mechanic	Portland, Oregon
Schmidt, Conrad	Power House Operator	Portland, Oregon
Schmidt, Carl Raymond	Purifierman	Portland, Oregon
Schoenbeck, Carl	Fireman	Portland, Oregon
Schroeder, C. G.	Pipe Machine Operator	Milwaukie, Oregon
Schultz, William H.	Mechanic's Helper	Tigard, Oregon
Schwartz, Albert C.	Mechanic	Vancouver, Washington
Schwartz, S. C.	Chief Chemist	Portland, Oregon
Scott, Richard H.	Painter	Portland, Oregon
Serravallo, Louis	Filter's Helper	Portland, Oregon
Serrano, Paul J.	Serviceman	Albany, Oregon
Shabo, William	Meter Reader	Portland, Oregon
Shane, A. M.	Collection Man	Portland, Oregon
Shaver, David W.	Collection Man	Portland, Oregon
Shiley, I. L.	Residential Salesman	Portland, Oregon
Shreffler, Lawrence Q.	Office Clerk	Salem, Oregon
Simpson, Edward G.	Customer Man	Portland, Oregon
Simpson, Harry S.	Dehydratorman	Portland, Oregon
Sinbad, Paul	Accounting Clerk	Portland, Oregon
Singer, William B.	Painter	Portland, Oregon
Sipola, Nels W.	Laborer	Amity, Oregon
Slatner, Kathleen G.	Stenographer	Portland, Oregon
Slater, Geo.	Truck Driver	Portland, Oregon
Smaller, Edith M.	Operating Clerk	Portland, Oregon
Smith, Alfred Finch	Gasmaker	Portland, Oregon
Smith, Fred H.	Pipe Machine Operator	Lake Grove, Oregon
Smith, Helen M.	Stenographer	Portland, Oregon
Smith, Herman B.	Residential Salesman	Portland, Oregon
Smith, H. J.	Tinner	Portland, Oregon
Smith, L. M.	Stores Accountant	Portland, Oregon
Smith, Ralph H.	Dispatcher	Portland, Oregon
Smith, Randolph L.	Briquet Salesman	Portland, Oregon
Smith, Walter B.	Leader	Portland, Oregon
Smith, William J.	Gasmaker	Portland, Oregon
Snover, Berkeley, Jr.	Messenger	Portland, Oregon
Snyder, Owen P.	Foreman	Portland, Oregon
Sofer, Carl V.	Governor Repairman	Portland, Oregon
Solidar, William A.	Dehydratorman	Portland, Oregon
Sorenson, Roy S.	Power House Fireman	Portland, Oregon
Syler, Joe A.	Leader	Portland, Oregon
Freight, Jesse O.	Serviceman	Portland, Oregon
Sparker, Luther	Bill Deliverer	Portland, Oregon
Springer, Eda	Comptometer Operator	Portland, Oregon
St. George, Stanley	Construction Engineer	Portland, Oregon
Stahly, Henry	Pulverizer Operator	Portland, Oregon
Stambaugh, Joseph M.	Filter	Portland, Oregon
Stanton, Harvey H.	District Superintendent	Salem, Oregon
Starkey, Thomas W.	Mechanic	Portland, Oregon
Staras, Leslie R.	Gasmaker	Portland, Oregon
Stearns, Roy N.	Storekeeper	Clatskanie, Oregon
Steele, C. W.	Residential Sales Manager	Portland, Oregon
Steinberg, Gus	Chief Addressograph Operator	Portland, Oregon
Stephens, Don D.	Meter Reader	Portland, Oregon
Stephens, M. H.	Field Auditor	Garden Home, Oregon
Stephens, William H.	Station Operator	Portland, Oregon
Stevenson, Oswald A.	New Construction Salesman	Portland, Oregon
Silnger, Helen J.	Stenographer	Portland, Oregon
Soellett, Margaret	Billing Machine Operator	Portland, Oregon

NAME	OCCUPATION	ADDRESS
Spokes, Robert C.	Printer's Helper	Portland, Oregon
Spore, W. T.	Foreman	Portland, Oregon
Stapf, Stanley J.	Filter	Portland, Oregon
Stark, Louise E.	Telephone Operator	Portland, Oregon
Stuart, H. H.	Purchasing Agent	Portland, Oregon
Stucker, Russell Howard	Laborer	Albany, Oregon
Stadler, C. H.	General Foreman	Portland, Oregon
Switzer, Henry J.	Pulverizer Operator	Portland, Oregon
Swanson, Arthur F.	Gasmaker	Portland, Oregon
Swanson, M. A.	Repairman	Portland, Oregon
Sydney, John W.	Residential Salesman	Portland, Oregon
Talbot, Guy W.	Chairman of the Board	Portland, Oregon
Tanner, Estelle F.	Accounting Clerk	Portland, Oregon
Tasballe, Louise	Stenographer	Portland, Oregon
Taylor, Charles H.	Janitor	Oregon City, Oregon
Taxford, Marjorie	Brigget Lumper	Gresham, Oregon
Teller, Bertha E.	Cash Teller	Portland, Oregon
Terry, Rose	Stenographer	Portland, Oregon
Thomas, Edward J.	Painter	Portland, Oregon
Thomas, Henry A.	Foreman	Albion, Oregon
Thompson, Elmer T.	Light Oil Plant Operator	Portland, Oregon
Thompson, Frank L.	Gasmaker	Portland, Oregon
Thompson, Ida Belle	Office Clerk	Forest Grove, Oregon
Thompson, Leslie E.	District Agent	Newberg, Oregon
Thorsen, Thorvald J.	Conveyorman	Portland, Oregon
Thygeson, George E.	Foreman	Portland, Oregon
Tilling, George	Janitor	Portland, Oregon
Tibbels, Richard F.	Master Mechanic	Portland, Oregon
Trox, Frank E.	Oil Washing Plant Operator	Portland, Oregon
Trachten, Jack	Conveyorman	Portland, Oregon
Tracy, C. H.	Janitor	Portland, Oregon
Trichter, Samuel F.	Mechanic	Portland, Oregon
Trichlein, Donald H.	Oil Dehydrator	Portland, Oregon
Tubbs, William H.	Laboratory Assistant	Portland, Oregon
Turner, Guy T.	Laborer	Salem, Oregon
Tuxter, Edward	Maintenance Man	Portland, Oregon
Tyler, John S.	Office Clerk	Portland, Oregon
Van Fleet, Jesse M.	Service Man	Portland, Oregon
Van Hooten, Charles H.	Sales Coordinator	Portland, Oregon
Vasich, James T.	District Agent	Oregon City, Oregon
Vasich, J. L.	Inspector	Portland, Oregon
Vasich, Lloyd E.	Brigget Lumper	Portland, Oregon
Vasich, Frank	Service Man	Oregon City, Oregon
Vasich, Hazel	Collection Clerk	Portland, Oregon
Vasich, Mary	Telephone Operator	Portland, Oregon
Walker, Herbert I.	Foreman	Portland, Oregon
Walsh, Mary L.	Home Economist	Portland, Oregon
Walton, Nedra	Stenographer	Portland, Oregon
Walton, Virgil L.	Light Oil Plant Operator	Portland, Oregon
Watts, Ralph L.	Chief Clerk, Production Bureau	Portland, Oregon
Ward, Harry E.	Price and Order Clerk	Portland, Oregon
Ward, Nell	Meter Reader	Forest Grove, Oregon
Wardale, Norman H.	Superintendent, Production Bureau	Portland, Oregon
Warner, W. A.	Residential Salesman	Portland, Oregon
Watson, Eugene F.	Operating Clerk	Portland, Oregon
Webb, Ralph T.	Maintenance Man	Portland, Oregon
Webster, Claude S.	Service Man	Beaverton, Oregon
Weber, Eugene	Filter	Portland, Oregon
Weber, Wilma	Cashier	Portland, Oregon
Webster, Holt W.	Office Clerk	Portland, Oregon
Webster, George W.	Oil Dehydrator	Gresham, Oregon
Weinbaum, Maurice	Meter Reader	Portland, Oregon
Weisenbach, John M.	Brigget Lumper	Portland, Oregon
Weiser, Eadie P.	Mechanical Engineer	Portland, Oregon
Wendelborn, Eleanor A.	Typist	Portland, Oregon
West, J. W.	Foreman	Portland, Oregon
Westbrook, Lyle J.	Gasmaker	Portland, Oregon
Westling, Erik J.	Service Man	Milwaukee, Oregon
Weythman, Charles J.	Dehydratorman	Portland, Oregon
Wheeler, R.	Purchasing Clerk	Albion, Oregon
White, Francis Clement	Laborer	Portland, Oregon
White, Halene M., Jr.	Junior Engineer	Portland, Oregon
White, Howard O.	Electrician	Portland, Oregon
Whitman, Ezer	Brigget Lumper	Gresham, Oregon
Wiese, Carl	Sulphur Plant Operator	Portland, Oregon
Wiese, Norman C.	Mechanic's Helper	Portland, Oregon
Wilkins, L. R.	Apartment House Salesman	Portland, Oregon
Wilkins, Edward B.	Power House Operator	Portland, Oregon
Wilkinson, L. J.	Collector	Portland, Oregon
Williams, Clark G.	Residential Salesman	Portland, Oregon
Williams, Roy	Station Operator	Portland, Oregon
Winklebeck, Glenn M.	Meter Reader	Portland, Oregon
Winn, John J., Jr.	Commercial Manager	Portland, Oregon
Winn, Ralph L.	Foreman	Portland, Oregon
Winter, Erwin F.	Bookkeeping Clerk	Portland, Oregon
Winters, Peter S.	Foreman	Portland, Oregon
Wolf, Henry	Sulphur Plant Operator	Portland, Oregon
Wood, Charles E.	Mechanic	Lake Grove, Oregon
Wood, Herbert L.	Gasmaker	Portland, Oregon
Wood, R. R.	Collector	Portland, Oregon
Workman, Grace Irene	Home Economist	Portland, Oregon
Worrell, James Martin	Sacker and Loader	Portland, Oregon
Wright, Clyde B.	Designing Engineer	Portland, Oregon
Yedd, William A.	Mechanic	Portland, Oregon
Young, Geo.	Chief Station Operator	Portland, Oregon
Zimmerman, Altha	Billings Machine Operator	Portland, Oregon
Ziner, Helen	Janitor	Portland, Oregon



Methods the Company will use in its new plant development evolved from a series of exhaustive tests in which "pilot" plants similar to the above played an important part. Such a unit reproduces on a small scale the conditions encountered in actual plant production, thus yielding basic data on which to judge engineering and economic feasibility.

SERVICE AND PROPERTY

Portland Gas & Coke Company supplies gas service in a total of 81 communities in the Willamette Valley and adjacent territory, including Portland and Salem, Oregon, and Vancouver, Washington.

The total number of customers served by the Company and data concerning its physical equipment as of December 31, 1940, and the amounts of the gas send-out and certain by-products sales for the twelve months ended on that date, compared with the previous year, are stated below:

	<u>1940</u>	<u>1939</u>
Manufactured gas customers	86,542	86,072
Gas works capacity (thousand cubic feet) per day.....	29,000	29,000
Gas holder capacity (thousand cubic feet).....	11,514	11,514
Gas send-out (thousand cubic feet) for twelve months.....	4,183,852	3,978,949
Miles of gas mains	2,292	2,274
Briquets sold (tons)	40,143	42,367
Benzol sold (gallons)	1,776,009	1,683,431
Tar sold (gallons)	1,148,591	1,523,652

ATTACHMENT 03

Aromatics, Gas and Coke from Heavy Petroleum Residues

E. L. HALL

Vice-President and Chief Engineer

Portland Gas & Coke Co.

Portland, Ore.

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Aromatics, Gas and Coke

From Heavy Petroleum

E. L. HALL Vice-President and Chief Engineer, Portland Gas & Coke Co., Portland, Ore.

Chem. & Met. INTERPRETATION

Petroleum refineries are rarely well situated for the manufacture of aromatic chemicals by the cracking of heavy petroleum residues, since optimum cracking conditions yield large quantities of gas, tar and coke as well. On this account the author's company feels that a gas utility, being set up for gas making and marketing, is a logical place for such production. Portland Gas & Coke Co. has been a pioneer in this development and has experimented extensively with a variety of residuum cracking processes, one of which has been chosen for use in a \$1,250,000 plant now under construction. Still another factor favoring this course is a rapidly expanding market for electrode pitch and coke in the Pacific Northwest.—Editors.

PRODUCTION of aromatics from petroleum is by no means a new art. As early as 1880 the Russians were familiar with the principles, and the working up of petroleum residues was even carried on industrially. However the processes then in use were crude and the operations of doubtful economic value. In more recent years, the carburetion of water-gas with gas oil, and later with heavy oil, has become a well-known source of aromatics.

There is an extensive literature dealing with the cracking of petroleum with the primary object of producing aromatics. The most notable investigation was that of W. F. Rittman who processed a light grade of petroleum in tubular apparatus (U. S. Bur. Mines Bul. 114). This operation was prompted by the World War shortage of toluol and was discontinued at the expiration of the emergency.

It is surprising, after such a long development period, during which time the chemical principles were thoroughly investigated, that the production of aromatics did not become more firmly established. Doubtless, the plentiful supplies of benzol and toluol from coal gas plants had much to do with this, which would seem to

indicate that the manufacture of aromatics, except as byproducts of gas manufacture, has not been profitable. The production of aromatics from petroleum is accompanied by large quantities of gas, tar, and carbon and the disposal of these secondary products has placed too heavy a burden on any industry not having a market for the principal product, gas, and for tar and carbon as well.

Even the petroleum industry, which is a logical outlet for aromatics as motor fuel, has been similarly handicapped. Of recent years the oil industry has sought to produce aromatics by the catalytic cracking of selected hydrocarbons but such processes do not lend themselves to the employment of heavy residues.

Processing of petroleum for the production of aromatics is essentially a destruc-

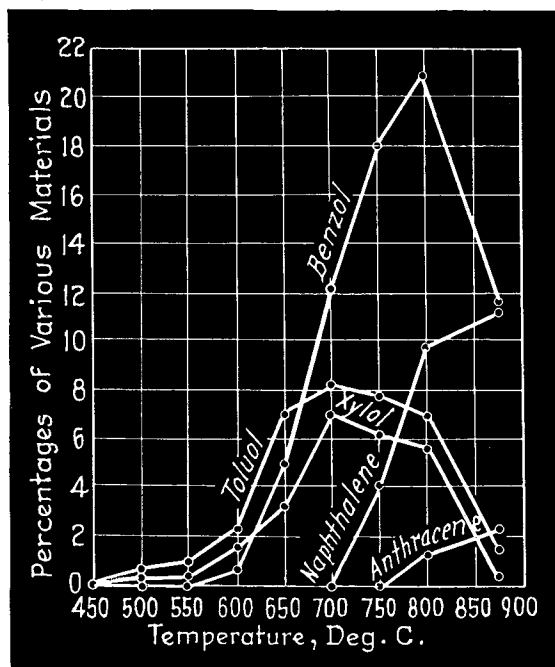
tive distillation of high molecular weight hydrocarbons into new groupings of simpler structure, accompanied by side reactions and polymerization. Expressed simply, the cracking of petroleum (principally paraffines and naphthenes) follows somewhat this progression: High molecular weight paraffines→olefines→(such as acetylenes, naphthenes, polycyclic compounds)→benzol, toluol, xylol, and higher homologues.

It is also true that in any one group the higher molecular weight compounds tend to split into lower molecular weight compounds, with scission of a radical. For example, butylene→propylene→ethylene, or xylol→toluol→benzol. However this general trend is also accompanied by alkylation and/or polymerization to produce higher molecular weight compounds, i.e., benzol→naphthalene, or benzol→ethylbenzol.

The final products from cracking petroleum, therefore, are numerous and non-selective. These reactions are functions of four variables, namely, temperature, time, pressure and concentration. The character of charging stock, aside from yields, does not materially change the nature of the resulting products.

Temperature, the most important variable, affects the cracking velocity

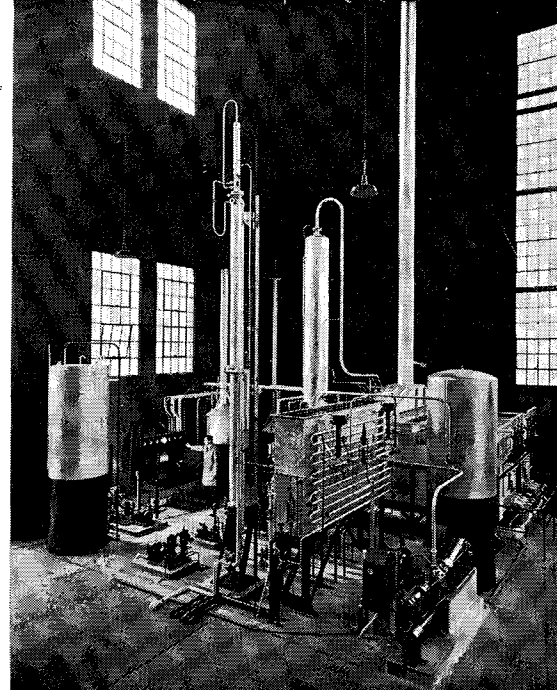
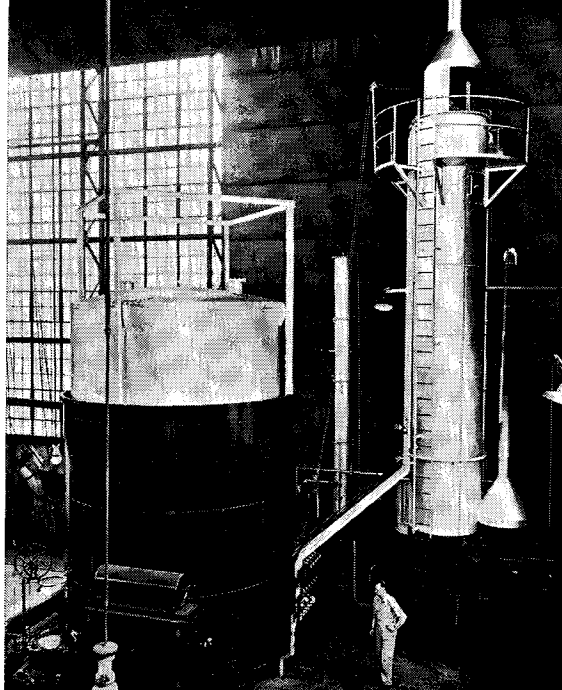
Fig. 1—Production of aromatics at various temperatures, from data of Egloff and Twomey



Residues

Fig. 3, Left—Oil gas generator pilot plant, for making rich oil gas, high in aromatics

Fig. 5, Right—Semi-commercial tubular type oil cracking unit of 2,000 gal. per day light oil capacity



by doubling the rate for each increase of 10 deg. C. in the cracking temperature, within the range of reaction. (See "Chemistry and Technology of Cracking," Sachanen and Tilicheyev, p. 28.)

Time, more conveniently referred to as "space-velocity," increases the cracking effect with longer duration, and vice versa. This effect is complementary to the effect of temperature, i.e., higher temperature and less time giving results similar to lower temperature and more time.

One effect of pressure is that higher pressures, by decreasing the volume, lower the space-velocity and increase the time of reaction. This effect is of course applicable to the reactions under consideration. However, the purely pressure effect, which is important in cracking for gasoline, does not favor the production of aromatics.

* Oil of any desired specific gravity is cracked in cylindrical shells lined with firebrick and filled with checker-work. (See flow diagram, Fig. 2.) The apparatus is fired intermittently with fuel oil, or by burning off the deposited carbon on the checker-work, with air supplied under forced blast. At the expiration of the heating period the air blast is discontinued, the stack valve closed and pre-heated oil is sprayed on to the checker-work which has been heated up to 1,800 to 2,000 deg. F. Gas making is discontinued after the temperature has been reduced several hundred degrees, whereupon the checker-work is purged out with steam and the apparatus is again heated up to the gas-making temperature.

The oil which has been pre-heated to a temperature of 200 deg. F. is progressively cracked as it passes down through the checker-work and finally issues from the base of the generator into a wash-box equipped with a water seal where a large amount of fluffy lampblack is deposited and removed by the water flowing in and out of the wash-box. The gas then passes into water scrubbers for the removal of tar and for further cooling. After passing through the usual relief holder, secondary coolers, exhausters, and gas purifiers, the gas is washed with an absorption oil for the removal of light oil (aromatics) together with all of the naphthalene and the larger portion of the organic sulphur.

The cracking of petroleum to produce products in the range of olefines and naphthenes is endothermic, while the further cracking of these products into aromatics is exothermic. This is a very important consideration since "runaway" reactions may result from lack of proper time-temperature control.

PRODUCTS OF CRACKING

Finally, economic considerations of the relative values of the components in the resulting mixture of hydrocarbon products will dictate the cracking conditions, which naturally represents a compromise. The chart of Fig. 1 (from data of Egloff and Twomey, *Chem. & Met.*, Vol. 15, 1916) gives a general picture of the proportion of various aromatics resulting from the cracking of petroleum at various temperatures. Where the object of cracking is primarily

Water coming from the wash-boxes is conveyed by flume to a Dorr thickener for concentration, and thence to an Oliver filter where the lampblack is recovered as a cake containing about 35 percent moisture. This cake is dried in rotary oil-fired dryers, similar to cement kilns, to about 12 to 15 percent moisture, and is then briquetted in a rotary press into pillow-shaped briquets which are coated with a starch solution, then dried and sacked. These briquets have a heating value on the dry basis of about 15,000 B.t.u. per lb. and command an excellent price as a domestic fuel.

Tar from the scrubbers and other parts of the plant is dehydrated and distilled to specification road-binder for paving purposes. For this purpose oil tar has been well accepted and has been widely used throughout Oregon.

After absorption the light oil is stripped from the wash-oil and refined into motor benzol, pure benzol and toluol. All of these materials are of exceptional purity. The motor benzol does not require acid washing and is only inhibited.

At the present time the heaviest type Dubbs cracked residuum from 6.5 to 8.5 deg. API is utilized. The use of such heavy residues was made possible by re-design of the oil gas generators in 1935, when the single generators were cross-connected in pairs at the bases, thereby making it possible to blast them in series; that is, alternately down one shell and up

the production of gas, as in gas works, much higher temperatures are employed than those shown in this chart, resulting in more gas and less aromatics. If the cracking is carried to the ultimate, the final products are carbon and hydrogen.

Oil Gas Manufacture—The manufacture of city gas from heavy petroleum is indigenous to the Pacific Coast, prompted initially by large and cheap supplies of petroleum from the California oil fields. Oil gas has been manufactured by Portland Gas & Coke Co., with which the writer is connected, since the year 1906. However, the usual process*, which is described in the accompanying footnote to facilitate an understanding of what follows, gives a relatively poor yield of aromatics, a fact which led to extensive research on aromatics production in which three different types of operation

the other. In this manner it was possible to burn off the heavy deposits of carbon on the tops of the checkers resulting from this type of heavy oil, and at the same time do away with the use of heating oil.

Composition of the 570 B.t.u. oil gas is as shown in Table I, and the yield as in Table II.

Table I—Oil Gas Composition

Carbon dioxide.....	1.7
Benzol.....	0.1
Ethylene.....	3.4
Oxygen.....	0.3
Carbon monoxide.....	7.4
Hydrogen.....	51.5
Methane.....	31.7
Nitrogen.....	3.9
Specific gravity.....	100.0
B.t.u. per cu. ft., gross.....	0.386
	570

Table II—Yield of Products from 8.4 Deg. API Charging Stock

Feed, gal. per M cu. ft.....	10.00
Gas, M cu. ft.....	1.0
Lampblack, lb. per M cu. ft.....	28.3
Tar, gal. per M cu. ft.....	0.38
Light oil, gal. per M cu. ft.....	0.46

were worked out: cracking oil in gas generators of conventional design; in tubular equipment; and in Knowles ovens.

GENERATOR OPERATION

Prior to 1923 aromatics were not recovered by Portland Gas & Coke Co. although the gas was known to contain about a quarter of a gallon per M cu.ft. It is, of course, readily apparent from the fundamentals briefly set forth previously that the operating temperature of 1,800 deg. F. necessary to produce a 570 B.t.u. gas is much beyond the optimum point for the production of aromatics. This incidentally explains the high purity of the benzol.

With the object of producing larger quantities of benzol, sufficient to justify recovery, research was undertaken in 1920 and 1921. A process was devised whereby rich oil gas of over 1,300 B.t.u. was produced at the optimum temperature for the production of aromatics. This gas, after being stripped of the aromatics, was reformed to the regular 570 B.t.u. standard. During the reforming operation, additional benzol was produced.

A small gas works owned by the company in Vancouver, Wash., was converted into a pilot plant to study the process. Many data were gathered over a period of several months, resulting also in two different procedures for reducing the high B.t.u. gas to 570 B.t.u. standard: Procedure A, by reforming (Hall patent No. 1,409,709); and Procedure B, by blending the rich gas with a very low B.t.u. gas to accomplish the same result (Hall patent No. 1,466,648). The latter procedure, which may be operated by producing the low B.t.u. gas in another generator prior to blending, may also be accomplished in the same generator by making low B.t.u. gas at the beginning of the run and high B.t.u. gas at the end of the run.

Procedure B in practice produces less benzol than Procedure A, but was nevertheless adopted by the company because of the lesser capital investment required and constitutes the present operating method. Procedure A lay dormant until recently when it was revived as a part of the current research program.

The production of byproducts such as briquets, tar, benzol and toluol, has resulted in substantial revenues thereby giving Portland Gas & Coke Co. an extremely low cost for manufactured gas and has equipped the company to successfully meet the very severe electrical competition prevalent in the Northwest. It was natural, therefore, in the effort to offset losses of revenues due to rate reductions, to work

for additional byproduct revenues. Of these, benzol, because of its high value per pound and available local market as motor fuel, offered the best opportunity.

After a survey of the available art, the most desirable procedure seemed to be the manufacture of high B.t.u. gas with reforming as outlined under Procedure A above.

During the year 1938, an oil gas generator pilot plant was built. This plant, illustrated in Fig. 3, consisted of a 4-ft. shell, 35 ft. high, built according to the same design as the large plant generators. A wash-box, scrubber, light-oil absorber and meter were provided together with a 2,000 cu. ft. storage holder. The plant was well instrumented, including a gas calorimeter and Ranarex specific gravity indicator. A still for distilling wash-oil was also installed.

The pilot plant was first operated to produce the regular 570 B.t.u. gas in order to calibrate the plant in comparison with the large commercial generators. Thereafter the pilot plant was operated for about six months to produce various grades of high B.t.u. gas. This gas, after being stripped of light oils and stored in the 2,000 cu.ft. holder, was subsequently reformed in

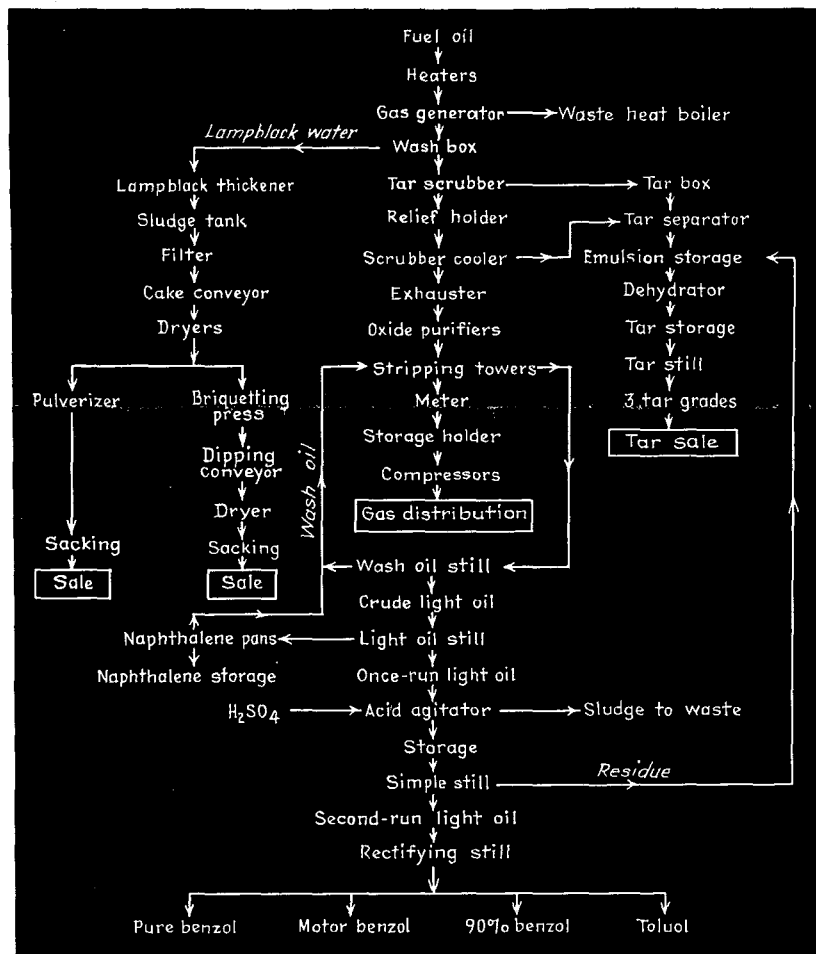
the same pilot plant generator. This was accomplished by taking the gas out of the holder with a small compressor and passing it through the pilot plant generator as in the gas-making operation. The reformed gas, after passing through the same auxiliary apparatus as before and being stripped of secondary light oil, was metered and sent to plant mains.

Various grades of heavy oil from 8 to 12 deg. API gravity were used; while cracking conditions were varied to produce high B.t.u. gas of from 950 to 1,350 B.t.u. per cubic foot.

The rates of flow were adjusted to give best space-velocity conditions. Such optimum conditions were obtained during each run by maintaining the gas issuing from the generator at constant specific gravity by means of the Ranarex indicator, there being a fixed relationship between the heat value of the gas and the specific gravity. There was also a constant relationship between the heat value of the gas and its benzol content, hence the production of aromatics could be controlled by the observation of specific gravity. This type of control is the subject of Hall patent No. 2,217,250.

An accompanying tabulation, Table III, summarizes the observations on

Fig. 2—Flow diagram of processes used by Portland Gas & Coke Co. in production of 570 B.t.u. gas, together with tar, briquets and aromatics



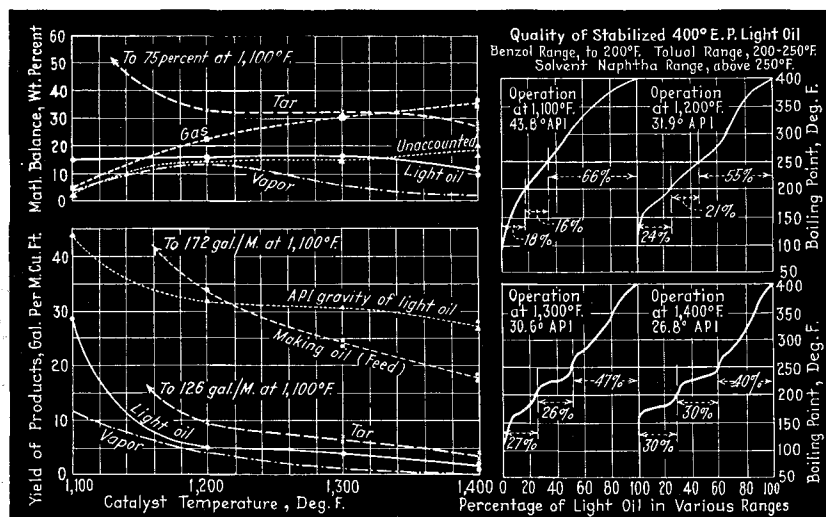


Fig. 4—Summary of cracking data obtained with tubular laboratory cracking unit, operating with a catalyst on a constant flow of 27.1 deg. API stock

12 deg. API oil, which is one of the conditions studied.

It was determined in various series of observations that space-velocity and temperatures were compensating, that is, results could be obtained with high temperatures and high space-velocities similar to those with low temperatures at low space-velocities.

After the completion of the pilot plant study, the operations were transferred to a pair of cross-connected generators for large scale experimentation. These generators were disconnected from the generator house mains and the wash-box and tar scrubbers were supplemented by a wash-oil absorber.

Instrumentation was provided to record oil quantity and rate of flow, with a Ranarex indicator for specific gravity of the gas and a calorimeter to give the heating value. Operation of the large scale apparatus gave substantially the same operating results as the pilot plant, although some difficulty was found in producing the tremendously high space-velocity utilized in the pilot plant because of the limitations in the oil piping system.

Reforming operations were not studied on a large scale since this operation is already a conventional one in the gas industry.

The quantities of tar produced in high B.t.u. operation are much in excess of the available market for road paving materials and the excess tar must be utilized for manufacturing 570 B.t.u. gas as a substitute for heavy oil in the regular generators. Hence, the gas-making value of the high B.t.u. tar was studied in pilot plant operation. In making 1,000 cu.ft. of 570

Table IV—Summary of Observed Data on Tubular Pilot Plant

Charging Stock	
Gravity, deg. API at 60 deg. F.	27.9
Viscosity, SUS at 77 deg. F.	47.
Viscosity, SUS at 122 deg. F.	35.
Molecular weight.	193.
Distillation range, 99%, deg. F.	358–688
Operating Data	
Test Number.	59
Av. outlet temp., deg. F.	1,435
Av. sp. gr. gas.	0.95
Heating value, B.t.u. per cu. ft., gross.	1,418
Feed per M cu. ft., gal.	22.5
Prebenzol per M cu. ft., gal.	1.06
Light oil per M cu. ft., gal.	3.01
Naphthas per M cu. ft., gal.	3.78
Tar per M cu. ft., gals.	4.93
Total liquid products per M cu. ft., gal.	12.78
Gas Analysis (Vol. %)	
O ₂	0
N ₂	0
CO ₂	0.40
CO	0.40
H ₂	10.70
CH ₄	34.40
C ₂ H ₆	19.10
C ₂ H ₄	0
C ₃ H ₈	15.60
C ₄	6.90
C ₅	2.80
C ₆	0
C ₇	0
	100.00

Table III—Pilot Plant Yields With High B.t.u. Operation of Oil Gas Generators

	(Charging stock, 11.7 to 12.0 deg. API cracked residuum)									
	6/3	6/2	6/1	6/7	5/31	6/6	6/10	6/4	6/8	6/9
Date of Run	6/3	6/2	6/1	6/7	5/31	6/6	6/10	6/4	6/8	6/9
Sp. gr. of lean gas (Ranarex.)	0.50	0.62	0.67	0.70	0.74	0.75	0.78	0.78	0.81	0.85
Oil used, gal. per M cu. ft.	15.28	17.66	18.90	19.35	20.90	19.83	20.90	24.65	23.04	25.05
Light oil, gal. per M cu. ft.	1.01	1.66	2.03	2.10	2.19	2.24	2.30	3.43	3.10	3.47
Tar, gal. per M cu. ft.	4.54	7.41	5.20	7.13	8.90	8.40	8.34	11.10	8.44	11.28
Oil used, lb. per M cu. ft.	125.4	145.5	155.2	158.8	170.0	163.0	171.6	203.0	189.0	205.5
Gas, lb. per M cu. ft.	38.2	47.4	51.2	53.5	56.6	57.4	59.6	59.6	61.9	65.0
Light oil, lb. per M cu. ft.	7.3	11.9	14.8	15.1	15.8	16.2	16.4	23.8	21.7	24.9
Tar, lb. per M cu. ft.	40.8	66.7	47.1	64.2	80.1	75.0	75.0	63.9	76.0	101.6
Recovery, lb. per M cu. ft.	86.3	126.0	113.1	132.8	152.5	149.2	151.0	183.3	159.6	191.5
Recovery, percent by weight	68.8	86.6	72.8	83.6	89.7	91.5	88.0	90.3	84.4	93.1
Light oil, vol. percent of making oil	6.6	9.4	10.7	10.9	10.6	11.3	11.0	13.9	13.5	13.9
Tar, vol. percent of making oil	29.7	42.0	27.5	36.8	42.9	42.3	39.9	45.0	36.6	45.0
Gas, weight percent of making oil	30.5	32.6	33.0	33.7	33.3	36.2	34.9	29.3	32.8	31.6
Light oil, deg. API gravity	30.8	29.9	30.1	31.9	31.7	30.9	33.8	37.0	35.6	39.2
Gas, B.t.u. per cu. ft. (gross)	946	1,075	1,125	1,194	1,208	1,254	1,295	1,308	1,318	1,362
Higher olefines in gas, vol. percent	3.4	5.1	8.0	9.6	12.6	11.1	13.6	13.2	15.0	16.5

B.t.u. gas of 0.395 sp.gr., 18.30 gal. of making tar of 1.187 sp.gr. yielded 2.15 gal. of tar-gas tar of 1.195 sp.gr. and 0.50 gal. of light oils of 0.8849 sp.gr.

TUBULAR EQUIPMENT

Concurrently with the investigations for producing aromatics in the internally fired checker-work type of apparatus, tubular equipment was also explored, with and without the use of catalysts.

In this procedure it is, for obvious reasons, necessary to use a petroleum with a relatively low Conradson residue, as exemplified by a diesel oil. The type of laboratory apparatus used in this investigation consists essentially of a cracking tube preceded by a small vaporizer and a constant feed device. The apparatus is electrically heated and equipped with thermocouples. The cracking tube is followed by a water-cooled condenser and a dry ice freeze-out apparatus. Observation of specific gravity is by a Ranarex indicator, and of heating value, by a calorimeter. The results of trials at various temperatures are shown in Fig. 4. It will be noted from the distillation range of the products boiling within the motor fuel range that satisfactory aromatic content, as indicated by the benzol and toluol plateaus, was not produced until temperatures between 1,300 and 1,400 deg. F. were reached.

About the time this investigation was completed it was learned that the General Fuel Co. of Detroit had been working along parallel lines and, after some negotiations, it was decided to combine forces to prevent duplication and to expedite results. As a result of this arrangement a semi-commercial tubular cracking unit was designed by the Bechtel-McCone-Parsons Co., petroleum refinery engineers, and built by Portland Gas & Coke Co. at the company's plant. This pilot plant is illustrated in Fig. 5. It had a capacity of 2,000 gal. of light grade oil per day and consisted of a gas-fired furnace

containing alloy tubing, followed by a fractionating column for the separation of heavy residues from the gas and light oil. The overhead products, after cooling, were compressed to 650 lb. per sq.in. and the condensate was rectified in a stabilizer to separate the prebenzols from the light oil.

This plant was operated for about six months and produced an excellent grade of aromatics. The operation was quite critical on account of the production of carbon in the exit connections, but this mechanical difficulty was overcome by the installation of carbon removing devices. Operations were conducted with and without a catalyst, generally around 1,400 deg. F., and the results from a typical run are shown in Table IV. Control of the operation was principally by the specific gravity of the outgoing rich gas, since an excellent correlation between specific gravity and the degree of cracking was found to exist.

It was also found that the quality of light oil in regard to aromatic content was readily judged from the specific gravity of the fraction boiling below 422 deg. F., satisfactory aromatic content being obtained with light oil having an API gravity below 32. This quality was generally associated with a gas specific gravity of 0.9 or less. It will be noted that the percentage yield by volume of aromatics from the 27 deg. API charging stock was greater than the corresponding yields in the generator type of operation from 12 deg. oil. This comparison is, however, somewhat misleading since if the 12 deg. oil is evaluated for its diesel oil content, the results are surprisingly similar.

KNOWLES COKE OVEN

The manufacture of 570 B.t.u. oil gas in checker-work generators produces as a byproduct large quantities of lampblack. This material, when briquetted, produces a high type of domestic fuel, but is not well suited for electro-metallurgical purposes where petroleum coke finds its field. Portland has lately become the Mecca for electro-metallurgical and electrochemical processes because of the advent of cheap power from the Bonneville development on the Columbia River. The aluminum industry, represented by the plants of the Aluminum Co. of America and the Reynolds Metals Co., has located in the Portland area and requires large amounts of petroleum coke for the manufacture of electrodes. This material is not produced in the Northwest and must be imported.

Consideration was therefore given by Portland Gas & Coke Co. to the manufacture of electrode coke from petroleum. After considerable study of the available apparatus Knowles ovens

were selected for this purpose, and an investigation was carried on jointly with the H. A. Brassert Co. of New York resulting in the building of a pilot coke oven.

This oven consisted of an insulated brick chamber approximately 3 ft. wide, 6 ft. long and 8 ft. high outside, with a hearth of silicon carbide, and walls about 1 ft. thick including the insulation. The oven was equipped with doors at either end for the removal of coke and was fired under the hearth by gas burners. A gas-fired silicon carbide muffle was provided in the upper part of the oven for superheating the gases from the distillation of oils, and a gas offtake communicating with the gas condensing and recovery apparatus already available in the generator type pilot plant. The investigation had two objectives: (1) to produce a type of coke suitable for the production of electrodes, and (2) to crack the overhead materials sufficiently to produce a satisfactory grade of aromatics. Trials demonstrated that both objectives could be achieved. An 8½ deg. API Dubbs cracked residuum was utilized for the investigation, the results of which are given below in Table V.

Knowles ovens have heretofore been used for the cracking of heavy petroleum residues in the oil industry, with the object of producing products in the range of gasoline and gas oil, and of getting rid of the carbon residue. The fractionation of aromatics in the Portland Gas & Coke Co.'s operation is a new objective and requires cracking at elevated temperatures and with modifications of the oven design.

Character of Aromatics—Consideration of the fundamentals set forth at the beginning of this paper makes it apparent that the yield and quality of aromatics produced by cracking are the result of the proper application of temperature and space-velocities. Therefore, the choice of charging stock and of apparatus are merely matters of economics.

Portland Gas & Coke Co.'s investigations were directed primarily to the production of aromatics of

* There is one distinct difference between the light oils and tars produced from petroleum and those produced from coal, which is the practical absence of oxygenated and nitrogenous compounds such as phenols and pyridine bases, only traces of these materials being present. On the other hand, the higher boiling fraction of oil tar corresponding to the cresote oil fraction in coal tar is also an excellent wood preservative. An investigation of the merit of oil tar cresote prepared by Portland Gas & Coke Co. has been made by Prof. Glenn Voorhies of Oregon State College and the results of his investigation have been published in Oregon State College Engineering Experiment Station Bulletin No. 13, entitled "Oil Tar Cresote for Wood Preservation." This investigation indicates that phenols are not necessary to a good wood preserving cresote and in fact are generally removed from coal tar cresote; and that because of the volatility of phenols their preservative value is of short duration.

relatively high purity, susceptible to being refined into specification products. It was desired to produce a grade of light oil of such a quality as to minimize refining difficulties, that is, under conditions of cracking sufficiently severe to eliminate most of the gum-forming diolefines. The light oils produced from the three methods described were generally of the same character when produced under similar cracking conditions. It was found that the light oil responded in a satisfactory manner to the usual refining methods employed in making motor benzol, pure benzol, pure toluol and the various other specification products usually obtained from coal tar. As an instance of the satisfactory quality of these light oils, it may be said that nitration toluol free from paraffines is readily prepared. It may be generally stated that light oil manufactured from petroleum under proper cracking conditions is in every way equal to the light oil from coal gas or coke oven plants.*

Oil tar from the coke oven is quite similar to that produced from the generator type of operation and is equally suitable for the preparation of road binders, briquetting and electrode pitches. The oil coke from Knowles ovens can be processed either to metallurgical or foundry coke, or to the high density coke required for the manufacture of electrodes.

Olefines—The lean gas after stripping of aromatic contents has an analysis as shown in Table VI. It will be noted that substantial quantities of ethylene, propylene and butylene are present in this gas. These products can be readily recovered by a combination of absorption, compression and refrigeration and are pres-

Table V—Coke Oven Pilot Plant Yields

Run No.	67
Feed, deg. API	8.4
Feed, gal. per M cu. ft.	17.8
Gas, M cu. ft.	1.0
B.t.u. per cu. ft., gross	1,038
Specific gravity	0.64
Light oil, 422 deg. E. P., gal. per M cu. ft.	2.15
Tar, gal. per M cu. ft.	6.08
Coke, lb. per M cu. ft.	22.68

Table VI—Lean Gas Composition

	Volume Percent
Carbon dioxide	0.20
Carbon monoxide	1.54
Oxygen	0.58
Hydrogen	22.74
Methane	43.59
Nitrogen	4.46
Ethylene	10.44
Ethane	7.20
Propene	6.00
Butenes	2.08
Pentenes	0.63
Hexenes	0.54
	100.00
B.t.u. per cu. ft., gross	1,038
Specific gravity	0.6379

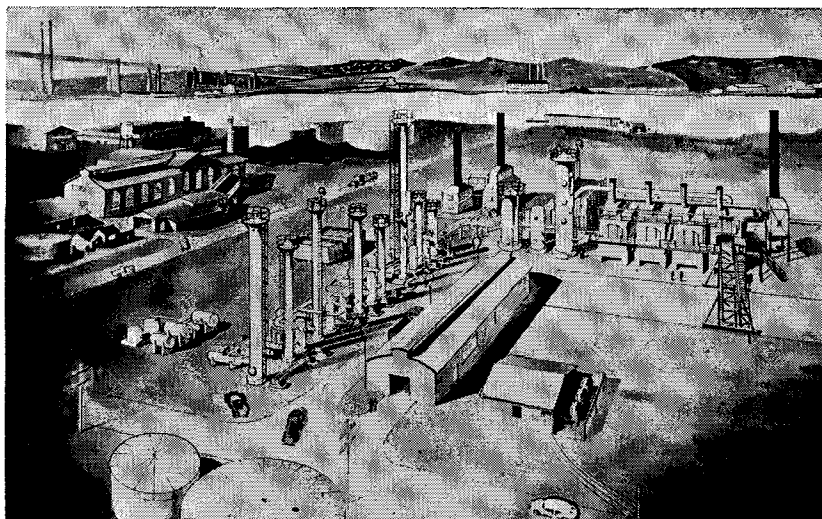


Fig. 6—Artist's drawing of new heavy-residuum cracking plant, using Knowles ovens, being built by Portland Gas & Coke Co. for byproduct production

ent in considerably larger amounts than in the cracking gases from oil refineries.

These olefines constitute a cheap and substantial supply of raw material for numerous synthetic organic chemicals. Availability of these hydrocarbons in the Northwest is particularly important in view of cheap electric power for the production of chlorine and caustic soda, which are generally the tools for converting the olefines into the numerous plastics and other products which have become so important to industry in the past few years. In a following section the utility of these products will be illustrated.

BYPRODUCT DEVELOPMENT

The research program briefly described above gave Portland Gas & Coke Co. the choice of several methods for the production of aromatics and the decision became a matter of economics. The Knowles coking oven method was finally chosen because, in addition to producing all of the byproducts given by the other methods, it also produces petroleum coke.

Therefore, we are now building four Knowles coke ovens for the processing of 8½ deg. API Dubbs cracked residuum. These ovens will be supplemented by light oil recovery apparatus together with additions to the existing light oil refinery which will permit the production of additional motor benzol and toluol, together with specification xylols and solvent naphthas. The tar will be processed to electrode pitch and road binder in existing tar distilling equipment.

Surplus tar will be used as a substitute for generator fuel in the existing oil gas generators, for which purpose tankage and piping connections will be provided. Lean gas after the removal of light oil is of approximately 1,100 B.t.u. and will be reformed in the existing oil gas generators to the required standard of 570 B.t.u., during which operation additional quantities of light oil and lampblack will be produced. It is expected that this plant, which will cost about \$1,250,000, will be ready for operation in December of this year. An artist's drawing of the completed plant is shown in Fig. 6.

From this development, including existing facilities, Portland Gas & Coke Co. will produce annually byproducts including 3,350,000 gal. of benzol, 540,000 gal. of toluol, 320,000 gal. of xylol, 317,000 gal. of solvent naphtha and 2,500,000 gal. of road tar; in addition, 42,000 tons of briquetted lampblack, 21,000 tons of electrode coke and 15,000 tons of electrode pitch. Not initially recovered but available for future production annually will be 3,000,000 gal. of creosote oil and 14,000,000 lb. of ethylene, 12,000,000 lb. of propylene and 6,000,000 lb. of butylene.

The gas industry is a logical collaborator of the oil refining industry for the most advantageous and economic processing of petroleum, a fact which is true principally for two reasons: (1) The gas industry can process petroleum advantageously at operating temperatures suitable for the production of aromatics, since the production of large quantities of gas does not constitute a limitation. (2) The petroleum industry, how-

ever, can process petroleum advantageously only to a point where the residues are sufficiently fluid for transportation. If the oil is processed to coke, the local market must be depended upon in view of freight limitations. Only in favored locations are the local markets large enough to absorb the quantities involved.

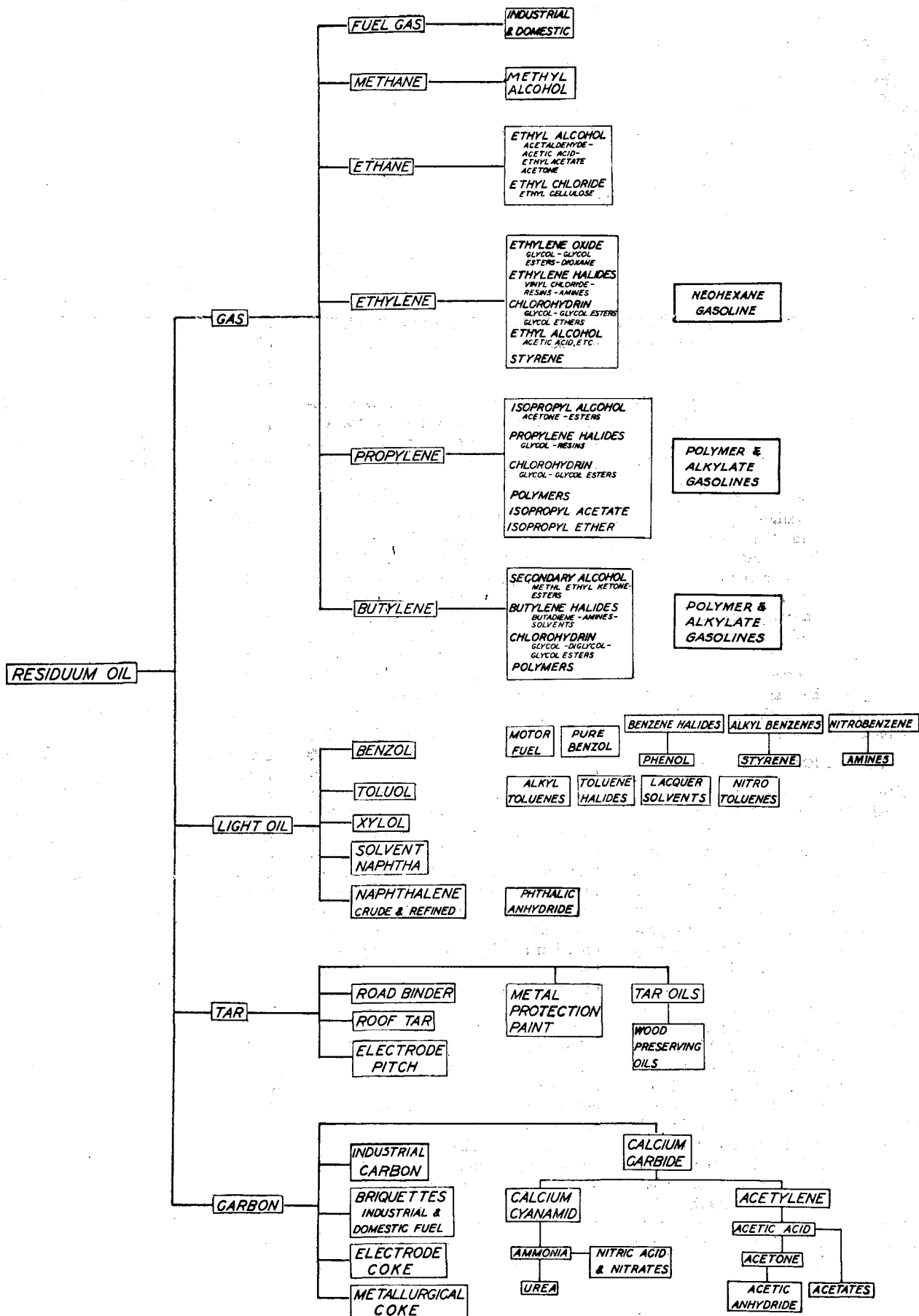
GAS INDUSTRY OPPORTUNITY

Thus it seems apparent that the gas industry can with advantage carry on the processing of petroleum from a point where the oil industry leaves off. To be sure, the petroleum industry can produce aromatics by selective extraction of materials containing small quantities of aromatics or by the catalytic cracking of selected hydrocarbons, but it is not believed that such methods can compete with aromatics produced by the gas industry from the heaviest petroleum residues.

There is a real opportunity for the gas industry to take its place in the sun as a purveyor of hydrocarbons to the chemical industry. There are few industrial organic chemicals that can not be synthesized directly or indirectly from either olefines or aromatics. To mention only a few of these, motor fuels, phenol, amines, styrene, lacquer solvents and explosives can be derived from the aromatics produced. With the recovery of methane and ethane, in addition to the olefines mentioned, alcohols, esters, resins, high anti-knock motor fuels and other organics such as glycols can be made. From the tar, road and roofing materials, pitches, paints and wood preservatives are all recoverable, and from the carbon, all types of coke and carbon products, as well as carbon derivatives such as CaC_2 . In fact the future of the manufactured gas industry in its intense competition with other fuels may well depend upon the capitalizing of these opportunities.

Acknowledgment—For their valuable contributions to the above investigations the writer extends his grateful acknowledgments to his associates in Portland Gas & Coke Co., Norman H. Wardale, S. C. Schwarz, J. K. Lehman, and the laboratory staff; as well as to C. T. Draney of Bechtel-McCone-Parsons Co., U. H. Stallings of H. A. Brassert Co., and Profs. George H. Gleeson and Glenn Voorhies of Oregon State College. This project is indebted to Paul B. McKee, president of Portland Gas & Coke Co., for his constructive vision and sympathetic support.

BY-PRODUCTS FROM CRACKING 8.4° A.P.I. RESIDUUM OIL IN OIL GAS GENERATORS & KNOWLES COKING OVENS



ATTACHMENT 04



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OCT 19 2000

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

Ms. Regina J. Mahoney
Director of MGP and Special Projects
Vectren Corporation
1630 North Meridian St.
P.O. Box 44945
Indianapolis, IN 46244-0945

Dear Ms. Mahoney

Thank you for your August 10, 2000 letter regarding evaluation of manufactured gas plant (MGP) remediation waste and the recent court decision on application of the Toxicity Characteristic Leaching Procedure (TCLP) test to this waste. In Association of Battery Recyclers, Inc., et al. v. US Environmental Protection Agency (April 21, 2000), the court vacated the Environmental Protection Agency's (EPA) use of the TCLP test to evaluate the leaching potential of MGP remediation waste for the purpose of classifying the waste as hazardous. EPA acknowledged the Court's action in its recently proposed rules on Corrective Action Management Units (65 FR 51087, footnote 6, August 22, 2000). Your letter requested clarification of the practical impact of this court ruling, and asked how EPA would implement the ruling.

Under the Court's opinion, the TCLP leach test cannot be used under RCRA to determine whether MGP waste is hazardous. Since MGP remediation waste is not a listed hazardous waste, it would only be classified as RCRA hazardous if it exhibited any one of the ignitable, corrosive, or reactive hazardous characteristics (40 CFR 261.21, 22, or 23) or if it is mixed with a listed waste. MGP remediation wastes are unlikely to exhibit these hazardous characteristics. Therefore, absent the TCLP test, MGP remediation wastes are unlikely to be RCRA hazardous waste under the federal program, and would not be required to meet RCRA requirements, including Land Disposal Restriction requirements. Some states do have hazardous waste regulatory programs that are broader in scope than the federal program. It is therefore important to know how state waste management requirements apply to excavation of MGP remediation wastes.

If you determine that your MGP remediation wastes are non-hazardous under both federal and state regulations, disposal of excavated material would be governed by state non-hazardous waste regulations. Some states, Indiana among them, have particular management requirements for industrial waste. In any case, we recommend that you carefully consider potential environmental consequences as you manage MGP wastes.

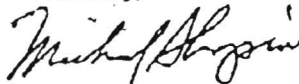
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Many states (including Indiana) also have programs to supervise remediation of contaminated industrial sites. I urge you to contact and work with responsible state environmental officials to address all aspects of MGP site remediation activity.

The Agency has also recently published a resource document for MGP sites, entitled A Resource for MGP Site Characterization and Remediation (EPA 542 R-00-005, July 2000). This document is available at EPA's web site (www.epa.gov/tlo) or at the Clu-in website (clu-in.org; go to Clu-in Advanced Search and search on the document number). It is also available through EPA's National Service Center for Environmental Publications (800-490-9198).

I hope this addresses your questions about MGP site remediation in light of the Court's ruling in the Battery Recyclers' case. If you have further questions, please contact my office or you may call Greg Helms at 703-308-8845 for TCLP questions, or for remediation questions, Michael Fitzpatrick at 703-308-8411, both in the Office of Solid Waste.

Sincerely,



Michael Shapiro
Principal Deputy Assistant Administrator



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

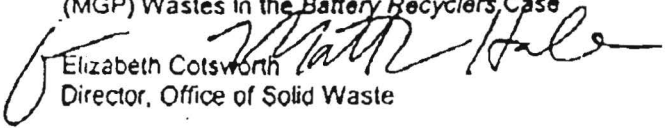
WASHINGTON, D.C. 20460

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PFG/3500 EPA-RCRA-A-A2

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSEMEMORANDUM

Subject: Implementation of Vacature of TCLP Use for Evaluating Manufactured Gas Plant (MGP) Wastes in the *Battery Recyclers Case*

From:  Elizabeth Cotsworth
Director, Office of Solid Waste

To: RCRA Senior Policy Advisors,
RCRA/Waste Enforcement Program Managers
Regions I-X

This memo is to notify you that the D. C. Court of Appeals, ruling in the case: Association of Battery Recyclers, Inc. et al. v. U.S. Environmental Protection Agency (decided April 21, 2000), vacated the use of the Toxicity Characteristic Leaching Procedure (TCLP) for evaluating manufactured gas plant (MGP) wastes.

In the *Battery Recyclers* case, several aspects of the Agency's Phase IV Land Disposal Restrictions (LDR) final regulations (63 FR 28556, May 26, 1998) were challenged. Among the issues addressed in the Phase IV final regulation was the Agency's earlier court remand in *Edison Electric Institute v. EPA* 2F.3rd 438 (D.C. Circuit, 1993), regarding application of the TCLP to evaluating whether mineral processing and MGP wastes are hazardous wastes. In *Edison Electric*, the plaintiffs challenged application of TCLP to their waste on the argument that the waste is not managed in MSW landfills, as presumed by the TCLP mismanagement scenario. The court held that the information in the record at the time was insufficient to show a rational relationship between the TCLP and a likely mismanagement scenario for mineral processing wastes. The Court's remand required that the Agency provide some factual support that the TCLP mismanagement scenario is plausible for mineral processing and MGP waste. The Phase IV proposal and final rule responded to the Court's remand by providing the required factual support. In the *Battery Recyclers* case, the affected industries challenged the adequacy of EPA's response to the *Edison Electric* remand.

In ruling in the *Battery Recyclers* case, the court found that EPA produced insufficient evidence that MSW disposal of MGP waste has happened or is likely to happen. The Court concluded that "...the EPA has not justified its application of the TCLP to MGP waste" and consequently ruled to "...vacate the Phase IV rule insofar as it provides for the use of TCLP to determine whether MGP waste exhibits the characteristic of toxicity."

PGA 000068

Since the court decision, we have received several inquiries concerning the implications of this decision for MGP cleanups. In a recent response to a letter from Vectren Corporation, an Indiana utility company owning a number of MGP sites, Michael Shapiro, Principal Deputy Assistant Administrator for Solid Waste and Emergency Response, provided EPA's view on this question. As the response states, under the Court's ruling, MGP waste cannot be classified as Toxicity Characteristic (TC) hazardous, since the TCLP test is part of the TC regulatory definition. Also, because MGP wastes are unlikely to exhibit any of the other hazardous characteristics, they are unlikely to be classified as hazardous under the federal program. As a practical matter, this means that individual MGP cleanups will probably not be regulated under federal RCRA Subtitle C.

For your information, I have attached a copy of Mr. Shapiro's letter to Vectren. Also, I call your attention to the preamble to the proposed Corrective Action Management Unit (CAMU) Rule, which makes the same point on the Battery Recycling decision and MGP wastes (See 65 FR 51087, footnote 6, August 22, 2000).

Of course, as you know, states may have regulations that are broader in scope than the federal regulations, and they may regulate MGP wastes as hazardous under their own state requirements. Also, many states regulate MGP cleanups under independent state cleanup programs, and state industrial waste requirements may also apply. Therefore, we are encouraging utilities and other parties conducting MGP cleanups to consult with the appropriate state regulatory authorities.

If Regional Office staff have any questions about TCLP or waste classification they may contact Greg Helms at 703-308-8845, or for questions on corrective action issues, Mike Fitzpatrick, at 703-308-8411.

Attachment

cc: RCRA Key Contacts, Regions I-X

ATTACHMENT 05



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, WA 98101

Reply To
Attn Of: ECL-117

MEMORANDUM

SUBJECT: In the Matter of Portland Harbor Superfund Site
Gasco Facility, Portland, Oregon
Administrative Order on Consent for Removal Action
Docket No. 10-2004-0068
Formal Dispute Resolution – Final Decision

FROM: Daniel D. Opalski 
Director, Office of Environmental Cleanup

TO: File

On September 9, 2004, NW Natural submitted its *Draft Preliminary Design Submittal* for a removal action at the Gasco facility. On September 24, 2004, the EPA Project Manager commented on NW Natural's submittal. The EPA Project Manager's comments included "directed revisions" regarding the disposal of dredged material and water quality monitoring. October 21, 2004, pursuant to Section XVI of the Administrative Order on Consent, NW Natural objected to these directed revisions. During the formal Negotiation Period, project staff from EPA and NW Natural resolved the dispute regarding water quality monitoring. However, the parties were not able to resolve the issues regarding dredged material disposal. Therefore, on November 12, 2002, the issue of appropriate disposal of dredged material was forwarded to the Director of the Office of Environmental Cleanup Office for a final decision.

The administrative record for this final decision is described in Attachment I.

Issues in Dispute

Although NW Natural amplifies its position in its November 10, 2004 *Reply to EPA's Response on Formal Dispute Resolution*, NW Natural states its dispute most succinctly in its October 21, 2004 request for formal dispute resolution:

EPA lacks the authority to require NW Natural to dispose of non-hazardous solid waste at a RCRA subtitle C hazardous waste facility.

NW Natural relies upon the regulatory status of the waste as well as the compliance status of a particular solid waste landfill, Waste Management's Columbia Ridge Landfill, as the basis for

justifying disposal of the dredged materials in a solid waste landfill. NW Natural contends that given the regulatory circumstances EPA's Project Manager has not justified the additional costs associated with requiring disposal at a RCRA Subtitle C facility.

In its October 27, 2004 *EPA Response to NW Natural's Request for Dispute Resolution*, EPA relies upon the CERCLA requirement that response actions be protective of human health and the environment. The concepts articulated in EPA's response are that (1) for a CERCLA removal action the determination of protectiveness extends beyond considering only regulations and requirements that are legally applicable under laws, and (2) the determination of protectiveness is within the purview of the On Scene Coordinator through authorities derived from CERCLA and the National Contingency Plan, as affirmed in Section XIV of the Administrative Order on Consent.

Discussion

It is helpful to be clear initially on what is *not* in dispute at this time. In particular, both EPA and NW Natural agree that under both federal and state of Oregon law, the dredged material does not constitute a hazardous waste. The parties further agree that regardless of the results of any Toxicity Characteristic Leaching Procedure (TCLP) test, a TCLP test can not be used to make a determination that the dredged manufactured gas plant (MGP) waste from the Gasco facility is a hazardous waste under federal or state of Oregon law.

Because the EPA Project Manager is not relying upon the regulatory status of the MGP waste as the basis for his direction of the removal action, the real issue before the parties is the breadth of the discretion of the EPA Project Manager to otherwise determine what is adequately protective. NW Natural puts forth the position that EPA's "Off-Site Rule" provides the only necessary check for determining protectiveness of disposal. Essentially, NW Natural posits that, given a waste that is by regulatory definition a solid waste and not a hazardous waste, sending that waste to any facility that is eligible to receive CERCLA waste under the "Off-Site Rule" is automatically adequately protective.

It seems clear that both parties fully acknowledge the impact of previous litigation and rule-making related to MGP hazardous waste determinations. NW Natural does not appear willing to acknowledge, however, how closely its proposal to use a solid waste landfill conforms to the circumstance that the ruling in *Association of Battery Recyclers, Inc. et al v. U.S. Environmental Protection Agency* at a minimum strongly suggests would have led to a different ruling had EPA been able to present such an actual (as opposed to hypothetical) planned disposal to the court. Setting aside the potential impact on the regulatory question, however, the parallels clearly bring to light the underlying environmental concern that was before the court and is at the heart of the disposal aspect of the Gasco facility removal action. While from a narrow regulatory viewpoint NW Natural's position is supportable, the results of its TCLP analyses demonstrate clearly the risk of an environmentally dangerous leachate being created in a disposal facility that may not be adequately designed to avoid the release of such leachate beyond the confines of the disposal facility. It is fully consistent with the "Off-Site Rule" to take sufficient steps to avoid

these kinds of releases, thereby avoiding the need for "secondary" cleanups or corrective actions due to the disposal of CERCLA wastes. Caution in this area seems to be in NW Natural's interests, as well.

In other ways, the degree of reliance on the "Off-Site Rule" suggested by NW Natural suggests that once a strict regulatory determination of a waste is made, one need not consider further the chemical and physical properties of the waste in determining its appropriate handling and disposition. Such a narrow view would mean, for example, not being particularly concerned about the training received by those who, while not handling a regulatorily defined hazardous waste, clearly will be handling materials that could present real risks to workers. Similar issues arise relative to the adequacy of measures to prevent spillage or other new releases of non-"hazardous" but still toxic materials en route to ultimate disposal.

EPA is always required to consider cost in determining appropriate response actions under CERCLA. NW Natural's position that EPA needs to provide a rationale that supports expenditures that will be required by its "directed revisions" is therefore reasonable. In particular, in this instance, NW Natural is calling into question the adequacy of the rationale for a change from disposal at a Subtitle D to a Subtitle C facility. Given a number of factors at play, including a desire to proceed in a timely fashion to conduct of the removal action, disposal in a Subtitle C facility has become the representation of a unique solution for achieving a protectiveness level, although it is not clear from what I have reviewed precisely what this protectiveness level is. On the other hand, the record indicates that in an attempt to resolve their disagreement both parties' the project staff have pursued options other than "simply" disposal at a Subtitle D or a Subtitle C facility. Therefore, this record suggests that there are measures of protectiveness that can be more precisely defined by EPA and which perhaps could be achieved by means and methods other than Subtitle C disposal. Of course, the costs of alternative approaches conceivably could approach or exceed the cost of disposal at a Subtitle C facility.

Communications with Oregon Department of Environmental Quality (DEQ) staff who are engaged in the permitting and oversight of the Columbia Ridge Landfill confirm that under Oregon law DEQ has considerable discretion in determining how non-municipal solid waste, or "special wastes" must be managed. Given its shared interest in avoiding the need for a "second cleanup" at Columbia Ridge (or any other facility), DEQ can be expected to consider very carefully the characteristics of the CERCLA wastes being proposed for disposal and to apply specific conditions, both at transfer locations and at the ultimate disposal location, that are consistent with the interests of protectiveness raised in this dispute.

Conclusion

In directing changes to insure a protective remedy, an EPA Project Manager, acting as the On Scene Coordinator for this removal action, is acting appropriately within the discretionary authority and responsibility vested in him by CERCLA and the National Contingency Plan. In determining protectiveness, the On Scene Coordinator is not bound to consider only regulatory definitions and determinations. In particular, for example, the EPA's "Off-Site Rule", while

making a potential disposal facility's compliance status a *necessary* condition for accepting CERCLA waste, does not guarantee that the compliance status of that facility is *sufficient* in determining the appropriateness of that facility when taking into account the physical and chemical characteristics of the waste in question. At the same time, it appears likely that there are approaches other than disposal at a Subtitle C facility that could offer an adequate level of environmental protection and which could be identified and sufficiently evaluated for effectiveness, implementability, and cost in a relatively short time frame.

Therefore, no later than January 14, 2005, the EPA Project Manager shall provide to NW Natural performance standards to be attained during the handling (including treatment), transport, and disposal of the dredged material. These standards shall constitute the definition of protectiveness and shall address at least 1) the risk of release of the CERCLA waste or constituents of that waste from treatment or containment units, vehicles, or vessels during treatment, transport, transfer, or disposal; 2) the risks associated with potential exposure of workers involved in the transport, disposal, or other handling (including treatment) of the waste; and 3) the risk of release of the CERCLA waste or constituents of that waste from the ultimate disposal location. No later than February 18, 2005, NW Natural shall submit to EPA a revised Preliminary Design Submittal presenting one or multiple alternatives that meet the performance standards specified by the EPA Project Manager and include a detailed description of the basis for NW Natural's belief that those performance standards will be attained. To the extent NW Natural's alternative or alternatives continue to rely on a specific facility, NW Natural shall address in detail its basis for confidence that the specific facility is in fact prepared to accept the CERCLA waste under the circumstances described in its alternative(s).

Attachment I – Administrative Record

In the Matter of Portland Harbor Superfund site
Gasco Facility, Portland Oregon
Administrative Order on Consent for Removal Action
Docket No. 10-2004-0068
Formal Dispute Resolution – Final Decision

1. November 12, 2004 Memorandum, Lori Houck Cora to Dan Opalski elevating dispute for final decision.
2. NW Natural September 9, 2004 *Draft Preliminary Design Submittal*.
3. EPA September 24, 2004 comment letter.
4. NW Natural October 21, 2004 letter requesting formal dispute resolution.
5. EPA October 27, 2004 response
6. Administrative Order on Consent for Removal Action, Docket No. 10-2004-0068
7. December 14, 2004 Personal Communication, Daniel D. Opalski, EPA, and Lissa Druback, Oregon Department of Environmental Quality
8. November 23, 2004 Email, Sean Sheldrake to Dan Opalski
9. November 29, 2004 Email, Sean Sheldrake to Dan Opalski

ATTACHMENT 06



Oregon

John A. Kitzhaber, MD, Governor

Department of Environmental Quality

Northwest Region Portland Office

2020 SW 4th Avenue, Suite 400

Portland, OR 97201-4987

(503) 229-5263

FAX (503) 229-6945

TTY (503) 229-5471

September 4, 2014

Also Sent Via E-mail

Mr. Robert J. Wyatt
NW Natural
220 N.W. Second Avenue
Portland, OR 97209

**Re: Management of Water Treatment System Residuals and Extraction Well PW-2L
Dense Non-Aqueous Phase Liquids - NW Natural "Gasco Site" and the Northern
Portion of the Siltronic Corporation Facility
Portland, Oregon
ECSI Nos. 84 and 183**

Dear Mr. Wyatt:

The Oregon Department of Environmental Quality (DEQ) reviewed the following requests to manage dense non-aqueous phase liquids (DNAPLs) and treatment system residuals:

- "Concurrence Request—Transport and Recycling of an Oil-Water Mixture Collected from Groundwater Wells in the NW Natural Gasco Facility TCE CMMA, 7900 NW St. Helens Rd., Portland, Oregon," dated June 13, 2014 (DNAPL Request), and;
- "Update on NW Natural Source Control Treatment Plant Residuals Sampling Program and Proposed Residuals Characterization and Disposal Protocol" dated July 21, 2014 (received July 23, 2014 [Residuals Determination]) and related correspondence.

NW Natural submitted the first letter to request DEQ's concurrence to transport manufactured gas plant (MGP) DNAPL removed from extraction well PW-2L to an oil processor for reclamation as a fuel. NW Natural submitted the second letter concerning a hazardous waste determination for treatment system residuals; including filter press cake and bag filter solids produced during treatment of groundwater contaminated by MGP constituents, or by MGP constituents and chlorinated volatile organic compounds (cVOCs). The cVOCs in groundwater, including trichloroethene (TCE), cis-1,2-dichloroethene, trans-1,2-dichloroethene, 1,1-dichloroethene, and vinyl chloride; result from releases on the Siltronic Corporation (Siltronic) Site that DEQ previously determined to be Resource Conservation and Recovery Act (RCRA) F002 listed hazardous waste. The DNAPL removed from extraction well PW-2L and the treatment system residuals are generated on the Siltronic Site and Gasco Site respectively. The letters were prepared on behalf of NW Natural by Anchor QEA, LLC (DNAPL Request) and Aponowich, Driscoll & Associates, Inc. ([ADA] Residuals Determination).

Based on the information provided by NW Natural and after review of DEQ laws and regulations regarding hazardous and solid waste, DEQ has determined the following:

- Groundwater entering the Siltronic pre-treatment facility contains F002 listed hazardous waste and exhibits the toxicity characteristic for benzene.
- Treatment system residuals do not contain and are not F002 hazardous waste. Once NW Natural submits and DEQ reviews and approves documentation of the filter press cake and bag filter solids analytical results, including results showing benzene concentrations are less than the toxicity characteristic hazardous waste criterion, the material can be disposed of as non-hazardous solid waste at Hillsboro Landfill or another DEQ permitted solid waste landfill that is willing to accept the treatment system residuals. The treatment residuals may only be disposed of at a DEQ solid waste permitted landfill and may not be stockpiled or used as daily cover at a landfill disposal site.
- There is insufficient information to approve the DNAPL Request. DEQ requests characterization of the DNAPL to determine if F002 constituents are present. In addition, DEQ will need characterization information about the DNAPL to determine if Oregon's solid waste laws and rules apply to management of the DNAPL. If NW Natural chooses to not provide additional characterization information, then the DNAPL should be managed presumptively as F002 hazardous waste.

Information regarding DEQ's determinations on the regulatory status of DNAPL and the treatment system residuals are provided below.

DNAPL

The DNAPL Request asks for DEQ's concurrence with NW Natural's request to transport MGP DNAPL removed from extraction well PW-2L to used oil processors to be processed into fuel for energy recovery.

After reviewing the DNAPL Request, DEQ cannot agree with NW Natural's request regarding the DNAPL generated from extraction well PW-2L. As indicated above, DEQ determined that releases of cVOCs on the Siltronic Site are F002 listed hazardous waste. Based on previous site characterization work conducted by the two companies, a portion of the Siltronic and NW Natural properties has been designated the "Spent TCE Contaminated Material Management Area" (Spent TCE CMMA). In the Spent TCE CMMA there is the potential for site investigations and cleanup activities to encounter F002 constituents. Extraction well PW-2L is located within the Spent TCE CMMA.

Analysis of DNAPL samples collected from monitoring wells in the vicinity of PW-2L detected cVOCs. For example, TCE was detected in DNAPL samples collected from monitoring well WS-11-125 in concentrations ranging between approximately 15,000 micrograms/kilogram (ug/kg) to 60,000 ug/kg.

Based on the information summarized above, there is the potential for the DNAPL in the Spent TCE CMMA to contain F002 hazardous waste, which would require management as a hazardous waste. Submittal of analyses demonstrating that cVOC constituents are not detected at method detection limits that are less than the lower of DEQ's occupational risk-based concentrations

(RBCs) or universal treatment standards [UTSs]) would provide a basis to rebut the presumption that this waste contains F002. If cVOCs are detected above the lower of the RBCs or UTSs, or if the detection limits exceed these criteria, DEQ would conclude the DNAPL is an F002 listed hazardous waste by the “mixture rule.”

In addition to evaluating the DNAPL for F002 constituents, NW Natural should evaluate the potential for the DNAPL to fail characteristic hazardous waste criteria. NW Natural should analyze representative samples using established methodology to determine the potential for DNAPL to fail a hazardous waste characteristic (i.e., toxicity, corrosivity, reactivity, and ignitability). DEQ requests this information to determine whether this waste is hazardous waste, and also to determine whether Oregon’s solid waste laws and rules would require specific management of the DNAPL to prevent environmental risks or otherwise meet Oregon’s solid waste requirements.

DEQ notes that MGP waste is exempt from the toxicity characteristic (i.e., MGP waste is exempt from testing using the toxicity characteristic leaching procedure [TCLP]). However, DEQ does not extend the MGP TCLP exemption to MGP wastes commingled with non-MGP sources of contamination. For evaluating the toxicity characteristic in these situations, representative samples are collected and analyzed using the TCLP. The results are then compared to the values listed in Table 1 of 40 CFR 261.24.

Depending on the chemical, the detection limits set out in the attachments to the DNAPL Request are greater than RBCs, UTSs, and/or TCLP values. Consequently, this data does not provide information sufficient to answer the question regarding whether the DNAPL is a hazardous waste. The information provided above applies to the DNAPL generated from extraction well PW-2L that is currently stored at the site.

DEQ cannot approve NW Natural’s request for long-term management of DNAPL wastes at Thermo-Fluids. DEQ would need to understand the characteristics of the DNAPL waste sufficiently to determine whether Thermo-Fluids can manage and dispose of this type of waste without a DEQ solid waste permit. An important consideration for the long-term approach to managing DNAPL is that cVOC concentrations likely vary between wells and perhaps between sampling periods. NW Natural’s proposal for long-term management must include characterizing DNAPL from different locations (e.g., different extraction wells) by collecting a set of samples in accordance with SW-846 methods and using the statistical standards set forth for waste characterization. In the case of DNAPL, DEQ expects that analyses will be difficult given the nature of the material. Consequently, DEQ recommends that NW Natural conduct DNAPL sample collection and analysis using the approach described in DEQ’s policy 2004-PO-001, “Guidance on Performing a Hazardous Waste Determination on an Oily Waste,” dated June 14, 2004 (attached). Specifically, DEQ has determined that the recommendations for “Managing the material for disposal or in a manner constituting disposal” (which includes burning for energy recovery) apply to the DNAPL generated from within the Spent TCE CMAA.

NW Natural may also choose to presumptively designate and manage DNAPL generated within the Spent TCE CMMA as F002 listed hazardous waste as an alternative approach to characterizing DNAPL as described in the paragraph above. An option that NW Natural may want to consider in this case is to remove the DNAPL to a Subpart B permitted cement kiln or industrial boiler for energy recovery.

TREATMENT SYSTEM RESIDUALS

DEQ has evaluated NW Natural's Residuals Determination which concludes that treatment system residuals are not hazardous waste. DEQ considers the Residuals Determination to be incomplete for the following reasons.

- The letter and supporting data are limited to F002 constituents; and
- The only treatment system analyses that are discussed are the effluent data from the Siltronic and Gasco pre-treatment facilities and only for F002 constituents.

The regulatory status and management of treatment system residuals, including the filter press cake and bag filter solids, is dependent on the influent groundwater being treated. Groundwater influent to the Siltronic pre-treatment system originates within the Spent TCE CMMA. Consequently, there is the potential for the groundwater to contain F002 listed hazardous waste. Given groundwater is an environmental media, detections of cVOCs would trigger a "contained-in determination" for groundwater entering the Siltronic pre-treatment system. Analysis of groundwater influent to the Siltronic pre-treatment system detected cVOCs.

Contained-In Determination

A "contained-in determination" is a process that evaluates whether environmental media exhibit a characteristic of hazardous waste, or are contaminated with concentrations of hazardous substances from listed hazardous waste that are above health-based levels. The determination of whether environmental media contain a listed hazardous waste is based on the risk to human health by direct exposure to the environmental media. Risk-based concentrations for F002 constituents (i.e., TCE, cis-1,2-dichloroethene, trans-1,2-dichloroethene, 1,1-dichloroethene, and vinyl chloride) in groundwater have previously been established for the Spent TCE CMMA as the federal drinking water maximum contaminant levels (MCLs).

Analytical data for groundwater entering and exiting the Siltronic and Gasco pre-treatment facilities were provided via an e-mail sent on June 9, 2014 and supplemented by e-mails sent June 26 and July 7. DEQ concludes from comparing influent cVOC concentrations to MCLs that groundwater entering the Siltronic pre-treatment system contains F002 listed hazardous waste.

There is also the potential for environmental media to contain hazardous substances that fail the toxicity characteristic of hazardous waste based on analysis of representative samples of the media using the TCLP and comparing the results to the values listed in Table 1 of 40 CFR 261.24. In the case of groundwater, detected concentrations of hazardous substances are

compared directly to TCLP values.

As indicated above, DEQ has determined that environmental media impacted by MGP wastes and non-MGP sources of contamination are not exempt from the TCLP. Based on this information, results of analyzing groundwater entering the Siltronic pre-treatment system should be compared to toxicity characteristic hazardous waste values. DEQ concludes based on the benzene concentrations that groundwater entering the Siltronic pre-treatment system is D018 characteristic hazardous waste.

Contained-In Determination Summary and Conclusions

As a generator of a solid waste, NW Natural is required by 40 CFR 262.11 to perform a hazardous waste determination. The influent groundwater contains F002 listed hazardous waste. The next step in the hazardous waste determination process is to determine, for purposes of compliance with 40 CFR Part 268 Land Disposal Restrictions (LDR), whether the influent groundwater exhibits a hazardous waste characteristic. Based upon evaluation of the data provided, DEQ determined that the groundwater is a characteristic hazardous waste, D018 for benzene.

For waste that is both listed and characteristic, 40 CFR 268.9(b) specifies that the standard for the listed waste will operate in lieu of the standard for the characteristic waste provided the listed waste includes a treatment standard for the constituent that causes the waste to exhibit the hazardous waste characteristic. The F002 listed waste LDR prohibition does provide a treatment standard for benzene. Consequently, the pre-treatment system effluent must meet the standards for only F-listed waste and the land disposal restrictions for underlying hazardous constituents associated with the D018 code do not apply.

Status of Treatment System Residuals

The regulatory status and management of treatment system residuals depends on the groundwater being treated. Based on the analytical results for effluent samples collected downstream of where process flows from the Siltronic and Gasco pre-treatment facilities merge, F002 constituents were either not detected above laboratory method detection limits or were detected at concentrations below MCLs. Based on this information DEQ concludes that treatment system residuals meet the treatment standards for F002 wastes and no longer require management as listed hazardous waste. The waste must still be characterized to determine if it is characteristic hazardous waste.

Although the treatment system residuals are not derived from treatment of a listed hazardous waste they are themselves solid wastes and subject to the requirements of 40 CFR 262.11. The treatment system residuals are also considered to be solid waste according to Oregon's statute. Based on the information summarized above, the hazardous waste determination should evaluate whether the treatment system residuals exceed toxicity characteristic criteria. DEQ considers the filter press material and the bag filter solids to be separate waste streams. Hazardous waste

Mr. Robert Wyatt
NW Natural
September 4, 2014
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determinations should be performed for both. DEQ also considers the compiled data for F002 constituents, polycyclic aromatic hydrocarbons, and metals provided in ADA's May 15, 2014 letter to be adequate for this purpose. However, the May 15th letter does not provide benzene data which is needed to complete the hazardous waste determinations for the two waste streams.

DEQ requires the laboratory analytical reports for the samples of treatment system residuals, including benzene analyses, to be provided to document the results compiled in the May 15th letter and complete the hazardous waste determinations for the two waste streams. If laboratory analyses for benzene are not available, representative samples of the treatment system residuals should be collected, analyzed for benzene, and the results provided to DEQ.

Pending NW Natural's submittal and DEQ's review and approval of documentation confirming the information in the May 15th letter and that benzene concentrations in filter press cake and bag filter solids are less than the toxicity characteristic hazardous waste criterion, the material can be disposed of as non-hazardous solid waste at Hillsboro Landfill or another DEQ permitted solid waste landfill that is willing to accept the treatment system residuals.

NW Natural should be advised that treatment system residuals are not environmental media. In other words, the materials are not "petroleum contaminated soil." Consequently, the treatment system residuals should be disposed of as solid waste by being placed in the landfill for burial and not stockpiled for other uses in landfill operations or construction, including being used as daily cover.

Please feel free to contact me with questions regarding this letter or the attachment.

Sincerely,

Dana Bayuk
Project Manager
Cleanup and Site Assessment Section

Attachment: DEQ Policy 2004-PO-001

Cc: Patty Dost, Pearl Legal Group
Terry Driscoll, ADA
John Edwards, Anchor
John Renda, Anchor
Carl Stivers, Anchor
Tim Stone, Anchor
Rob Ede, Hahn & Associates
Myron Burr, Siltronic
Alan Gladstone, Davis Rothwell Earle and Xochihua

Mr. Robert Wyatt
NW Natural
September 4, 2014
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Bill Earle, Davis Rothwell Earle and Xochihua
James Peale, Maul Foster & Alongi, Inc.
Sean Sheldrake, EPA
Rich Muza, EPA
Lance Peterson, CDM
Scott Coffey, CDM
Keith Johnson, NWR/C&SA
Audrey O'Brien, NWR/SW & HW
Jay Collins, NWR/HW
Tim Spencer, NWR/SW
Rob Burkhart, NWR/WQ
ECSI No. 84 File
ECSI No. 183 File

ATTACHMENT 07




EPA ID:	ORD096253737	<i>Active</i>
Common Name:	Siltronic Corporation	
Employee count:	400	Activity Start: 3/11/1992
Location:	7200 NW FRONT AVE PORTLAND OR 97210 MULTNOMAH County	
Latitude:	45.5775 45° 34' 39.0000"	Longitude: -122.7552 -122° 45' 18.0000"
SIC Codes:	3674 - SEMICONDUCTORS	

Facility is a Hazardous Waste Generator

Current Status: SQG as of 12/31/2014

Hazardous Waste Generation Reporting History

Report Year	Generator Status	Number of Waste Streams	Tons Generated	Sent Date	Received Date
 2014	SQG	17	6.5997855	12/15/2014	02/24/2015
<hr/>					
Waste Stream: Waste chromic acid		Source: Laboratory analytical wastes (used chemicals)			
Waste Codes: D002, D004, D007		CAS Codes: HF, 7697-37-2			
Form: Spent concentrated acid					
Reported: 50.00 LB = 22.68 KG		Managed Onsite: 0.00 KG			
<hr/>					
Shipments:		07/28/2014 007852261FLE NED981723513 50.00 LB Incineration - thermal destruction other than use as a fuel			
<hr/>					
Waste Stream: Waste contaminated rags and debris, waste wax		Source: Painting and coating			
Waste Codes: D001		CAS Codes:			
Form: Resins, tars, polymer or tarry sludge					
Reported: 9126.00 LB = 4138.64 KG		Managed Onsite: 0.00 KG			
<hr/>					
Shipments:		01/08/2014 000725626VES COD980591184 998.00 LB Energy recovery or fuel blending			
		05/08/2014 000725801VES COD980591184 2400.00 LB Energy recovery or fuel blending			
		09/17/2014 000880042VES COD980591184 3408.00 LB Energy recovery or fuel blending			
		12/30/2014 000725978VES COD980591184 3120.00 LB Energy recovery or fuel blending			
<hr/>					
Waste Stream: Hydrogen peroxide debris		Source: Cleanup of spill residues (Not part of an ongoing remediation project)			
Waste Codes: D001		CAS Codes:			
Form: Contaminated debris: paper, rags, wood, empty containers, etc.					
Reported: 40.00 LB = 18.14 KG		Managed Onsite: 0.00 KG			
<hr/>					
Shipments:		05/08/2014 000725801VES COD980591184 40.00 LB Incineration - thermal destruction other than use as a fuel			
<hr/>					
Waste Stream: Partially filled and empty aerosol cans		Source: Painting and coating			
Waste Codes: D001, D003		CAS Codes:			

Waste Codes:				
Form: Paint, ink, lacquer, or varnish				
Reported: 75.00 LB = 34.01 KG		Managed Onsite: 0.00 KG		
Shipments:	12/30/2014 000725978VES COD980591184	75.00 LB	Fuel blending prior to energy recovery at another site	
Waste Stream:	Chromic debris	Source: Cleanup of spill residues (Not part of an ongoing remediation project)		
Waste Codes:	D007	CAS Codes:		
Form: Contaminated debris: paper, rags, wood, empty containers, etc.				
Reported: 10.00 LB = 4.54 KG		Managed Onsite: 0.00 KG		
Shipments:	09/17/2014 000880043VES ORD089452353	10.00 LB	Landfill or surface impoundment that will be closed as landfill	
Waste Stream:	Mercury Debris	Source: Cleanup of spill residues (Not part of an ongoing remediation project)		
Waste Codes:	D009	CAS Codes:		
Form: Other inorganic solids (specify in comments)				
Reported: 54.00 LB = 24.49 KG		Managed Onsite: 0.00 KG		
Shipments:	09/17/2014 000880044VES AZ0000337360	48.00 LB	Metals recovery including retorting, smelting, chemical, etc.	
	12/30/2014 000725979VES AZ0000337360	6.00 LB	Metals recovery including retorting, smelting, chemical, etc.	
Waste Stream:	Mixed facility lab waste	Source: Laboratory analytical wastes (used chemicals)		
Waste Codes:	D002, D006, D007, D009, D011	CAS Codes:		
Form: Other inorganic liquid (specify in comments)				
Reported: 15.00 LB = 6.80 KG		Managed Onsite: 0.00 KG		
Shipments:	09/17/2014 000880044VES AZ0000337360	15.00 LB	Metals recovery including retorting, smelting, chemical, etc.	
Waste Stream:	Hollow cathode tubes	Source: Process equipment change-out or discontinue use of equipment		
Waste Codes:	D004, D005, D006, D007, D008, D009	CAS Codes:		
Form: Contaminated debris: paper, rags, wood, empty containers, etc.				
Reported: 10.00 LB = 4.54 KG		Managed Onsite: 0.00 KG		
Shipments:	09/17/2014 000880044VES AZ0000337360	10.00 LB	Metals recovery including retorting, smelting, chemical, etc.	
Waste Stream:	Titration Lab Waste	Source: Laboratory analytical wastes (used chemicals)		
Waste Codes:	D001	CAS Codes:		
Form: Lab packs with no acute hazardous waste				
Reported: 11.00 LB = 4.99 KG		Managed Onsite: 0.00 KG		
Shipments:	09/17/2014 000880042VES COD980591184	11.00 LB	Incineration - thermal destruction other than use as a fuel	


Waste Stream:	Beryllium Tubes			Source:	Process equipment change-out or discontinue use of equipment	
Waste Codes:	D007, D008, D011			CAS Codes:		
Form:	Contaminated debris: paper, rags, wood, empty containers, etc.					
Reported:	10.00 LB = 4.54 KG			Managed Onsite:	0.00 KG	
Shipments:	09/17/2014	000880043VES	ORD089452353	10.00 LB	Landfill or surface impoundment that will be closed as landfill	
Waste Stream:	lab pack 1			Source:	Laboratory analytical wastes (used chemicals)	
Waste Codes:	D001			CAS Codes:		
Form:	Lab packs with no acute hazardous waste					
Reported:	16.00 LB = 7.26 KG			Managed Onsite:	0.00 KG	
Shipments:	01/08/2014	000725627VES	ILD098642424	16.00 LB	Incineration - thermal destruction other than use as a fuel	
Waste Stream:	lab pack 2			Source:	Laboratory analytical wastes (used chemicals)	
Waste Codes:	D001, D002			CAS Codes:		
Form:	Lab packs with no acute hazardous waste					
Reported:	62.00 LB = 28.12 KG			Managed Onsite:	0.00 KG	
Shipments:	09/17/2014	000880078VES	ILD098642424	62.00 LB	Incineration - thermal destruction other than use as a fuel	
Waste Stream:	lab pack 3			Source:	Laboratory analytical wastes (used chemicals)	
Waste Codes:	D002			CAS Codes:		
Form:	Lab packs with no acute hazardous waste					
Reported:	285.00 LB = 129.25 KG			Managed Onsite:	0.00 KG	
Shipments:	09/17/2014	000880045VES	ILD098642424	190.00 LB	Incineration - thermal destruction other than use as a fuel	
	09/17/2014	00880045VES	ILD098642424	65.00 LB	Incineration - thermal destruction other than use as a fuel	
	09/17/2014	000880045VES	ILD098642424	30.00 LB	Incineration - thermal destruction other than use as a fuel	
Waste Stream:	Site remediation derived (well) wastewater			Source:	Remediation waste generated under state approved cleanup authority	
Waste Codes:	D040, D043, F002			CAS Codes:		
Form:	Very dilute aqueous waste containing more than 99% water					
Reported:	3750.00 LB = 1700.63 KG			Managed Onsite:	0.00 KG	
Shipments:	01/08/2014	000725624VES	COD980591184	1836.00 LB	Incineration - thermal destruction other than use as a fuel	
	05/08/2014	000725803VES	COD980591184	1377.00 LB	Incineration - thermal destruction other than use as a fuel	
	09/17/2014	000880051VES	COD980591184	960.00 LB	Incineration - thermal destruction other than use as a fuel	
	12/30/2014	000725976VES	COD980591184			

1377.00 Incineration - thermal
LB destruction other than use as
a fuel

Waste Stream:	Trash/PPE from drilling operations	Source:	Remediation waste generated under state approved cleanup authority		
Waste Codes:	F002	CAS Codes:			
Form:	Contaminated debris: paper, rags, wood, empty containers, etc.				
Reported:	600.00 LB = 272.10 KG		Managed Onsite:	0.00 KG	
Shipments:	01/08/2014	000725625VES	ORD089452353	487.00 LB	Landfill or surface impoundment that will be closed as landfill
	05/08/2014	000725804VES	ORD089452353	100.00 LB	Landfill or surface impoundment that will be closed as landfill
	09/17/2014	000880052VES	ORD089452353	79.00 LB	Landfill or surface impoundment that will be closed as landfill
	09/17/2014	000880051VES	ORD089452353	72.00 LB	Landfill or surface impoundment that will be closed as landfill
	12/30/2014	000725977VES	ORD089452353	262.00 LB	Landfill or surface impoundment that will be closed as landfill

Waste Stream:	Soil and Debris	Source:	Remediation waste generated under state approved cleanup authority		
Waste Codes:	F002	CAS Codes:			
Form:	Contaminated soil				
Reported:	2.00 LB = 0.91 KG		Managed Onsite:	0.00 KG	
Shipments:	01/22/2014	000725651VES	COD980591184	202.00 LB	Incineration - thermal destruction other than use as a fuel

Waste Stream:	Contaminated Soil	Source:	Remediation waste generated under state approved cleanup authority		
Waste Codes:	F002	CAS Codes:			
Form:	Contaminated soil				
Reported:	437.00 LB = 198.18 KG		Managed Onsite:	0.00 KG	
Shipments:	05/08/2014 000725803VES COD980591184		437.00 LB	Incineration - thermal destruction other than use as a fuel	

 2013	LQG	22	23.621001	12/17/2013	02/28/2014
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Waste Stream:	Waste chromic acid	Source:	Laboratory analytical wastes (used chemicals)		
Waste Codes:	D002, D004, D007	CAS Codes:	HF, 7697-37-2		
Form:	Spent concentrated acid				
Reported:	2091.00 LB = 948.27 KG		Managed Onsite:	0.00 KG	
Shipments:	01/04/2013	004462551FLE	NED981723513	293.00 LB	Incineration - thermal destruction other than use as a fuel
	01/17/2013	004462584FLE	NED981723513	182.00 LB	Incineration - thermal destruction other than use as a fuel
	03/22/2013	003918448FLE	NED981723513	166.00 LB	Incineration - thermal destruction other than use as a fuel
	08/02/2013	006535897FLE	NED981723513		

				1200.00 LB	Incineration - thermal destruction other than use as a fuel
	08/02/2013	00653589FLE	NED981723513	400.00 LB	Incineration - thermal destruction other than use as a fuel
	08/16/2013	006547963FLE	NED981723513	100.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:	Waste chromic acid - loose pack		Source:	Laboratory analytical wastes (used chemicals)	
Waste Codes:	D002, D007		CAS Codes:	7697-37-2, HF	
Form:	Spent concentrated acid				
Reported:	50.00 LB = 22.68 KG		Managed Onsite:	0.00 KG	
Shipments:	08/02/2013	006535897FLE	NED981723513	50.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:	Contaminated Used Oil		Source:	Oil changes and filter or battery replacement	
Waste Codes:	D039, D040, F002		CAS Codes:		
Form:	Waste oil				
Reported:	56.00 GAL = 190.47 KG		Managed Onsite:	0.00 KG	
Shipments:	06/27/2013	000269933FLE	WAD981769110	56.00 GAL	Fuel blending prior to energy recovery at another site
Waste Stream:	Mixed facility lab waste		Source:	Laboratory analytical wastes (used chemicals)	
Waste Codes:	D002, D006, D007, D009, D011		CAS Codes:		
Form:	Other inorganic liquid (specify in comments)				
Reported:	30.00 LB = 13.61 KG		Managed Onsite:	0.00 KG	
Shipments:	01/03/2013	000168099VES	AZ0000337360	15.00 LB	Metals recovery including retorting, smelting, chemical, etc.
	08/30/2013	000725539VES	AZ0000337360	15.00 LB	Metals recovery including retorting, smelting, chemical, etc.
Waste Stream:	Partially filled and empty aerosol cans		Source:	Painting and coating	
Waste Codes:	D001, D003		CAS Codes:		
Form:	Paint, ink, lacquer, or varnish				
Reported:	88.00 LB = 39.91 KG		Managed Onsite:	0.00 KG	
Shipments:	01/03/2013	000168098VES	COD980591184	10.00 LB	Incineration - thermal destruction other than use as a fuel
	06/25/2013	000144109VES	COD980591184	78.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:	Waste contaminated rags and debris, waste wax		Source:	Painting and coating	
Waste Codes:	D001		CAS Codes:		
Form:	Resins, tars, polymer or tarry sludge				
Reported:	8124.00 LB = 3684.23 KG		Managed Onsite:	0.00 KG	

Shipments:	01/03/2013	000168098VES	COD980591184	1396.00 LB	Energy recovery or fuel blending
	04/16/2013	000191517VES	COD980591184	1906.00 LB	Energy recovery or fuel blending
	06/25/2013	000144109VES	COD980591184	1750.00 LB	Energy recovery or fuel blending
	08/30/2013	000725537VES	COD980591184	1611.00 LB	Energy recovery or fuel blending
	10/30/2013	000724521VES	COD980591184	1961.00 LB	Energy recovery or fuel blending

Waste Stream:	Chromic debris	Source:	Cleanup of spill residues (Not part of an ongoing remediation project)
Waste Codes:	D007	CAS Codes:	
Form:	Contaminated debris: paper, rags, wood, empty containers, etc.		
Reported:	839.00 LB = 380.49 KG	Managed Onsite:	0.00 KG

Shipments:	06/25/2013	000144108VES	ORD089452353	68.00 LB	Landfill or surface impoundment that will be closed as landfill
	08/30/2013	000725538VES	ORD089452353	146.00 LB	Landfill or surface impoundment that will be closed as landfill
	10/30/2013	000724520VES	ORD089452353	95.00 LB	Landfill or surface impoundment that will be closed as landfill
	10/30/2013	000724520VES	ORD089452353	290.00 LB	Landfill or surface impoundment that will be closed as landfill
	10/30/2013	000724520VES	ORD089452353	335.00 LB	Landfill or surface impoundment that will be closed as landfill

Waste Stream:	Hydrogen peroxide debris	Source:	Cleanup of spill residues (Not part of an ongoing remediation project)
Waste Codes:	D001	CAS Codes:	
Form:	Contaminated debris: paper, rags, wood, empty containers, etc.		
Reported:	49.00 LB = 22.22 KG	Managed Onsite:	0.00 KG

Shipments:	04/16/2013	000191517VES	COD980591184	49.00 LB	Incineration - thermal destruction other than use as a fuel
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Waste Stream:	chrome contaminated demo debris	Source:	Other routine cleanup not part of ongoing remediation (specify in comments)
Waste Codes:	D007	CAS Codes:	
Form:	Other inorganic solids (specify in comments)		
Reported:	17320.00 LB = 7854.62 KG	Managed Onsite:	0.00 KG

Shipments:	08/06/2013	000483382VES	ORD089452353	8600.00 LB	Landfill or surface impoundment that will be closed as landfill
	12/18/2013	011946254JJK	ORD089452353	8720.00 LB	Landfill or surface impoundment that will be closed as landfill

Waste Stream:	Flammable paint (loose pack)	Source:	Painting and coating
Waste Codes:	D001	CAS Codes:	
Form:	Paint, ink, lacquer, or varnish		
Reported:	251.00 LB = 113.83 KG	Managed Onsite:	0.00 KG

Shipments:	01/03/2013	000168098VES	COD980591184	161.00 LB	Energy recovery or fuel blending
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Waste Stream:	lab pack 1	Source:	Laboratory analytical wastes (used chemicals)
Waste Codes:	D001, D035, U159	CAS Codes:	
Form:	Lab packs with no acute hazardous waste		
Reported:	54.00 LB = 24.49 KG	Managed Onsite:	0.00 KG
Shipments:	08/30/2013 000725537VES COD980591184	19.00 LB	Fuel blending prior to energy recovery at another site
	01/03/2013 000168100VES ILD098642424	35.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:	lab pack 2	Source:	Laboratory analytical wastes (used chemicals)
Waste Codes:	D001, D003, D035	CAS Codes:	
Form:	Lab packs with no acute hazardous waste		
Reported:	20.00 LB = 9.07 KG	Managed Onsite:	0.00 KG
Shipments:	01/03/2013 000168100VES ILD098642424	20.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:	lab pack 3	Source:	Laboratory analytical wastes (used chemicals)
Waste Codes:	D002	CAS Codes:	
Form:	Lab packs with no acute hazardous waste		
Reported:	45.00 LB = 20.41 KG	Managed Onsite:	0.00 KG
Shipments:	01/03/2013 000168100VES ILD098642424	45.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:	lab pack 4	Source:	Laboratory analytical wastes (used chemicals)
Waste Codes:	D008, U096, U202	CAS Codes:	
Form:	Lab packs with no acute hazardous waste		
Reported:	10.00 LB = 4.54 KG	Managed Onsite:	0.00 KG
Shipments:	01/03/2013 000168100VES ILD098642424	10.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:	lab pack 5	Source:	Laboratory analytical wastes (used chemicals)
Waste Codes:	D001, D035, U003, U220	CAS Codes:	
Form:	Lab packs with no acute hazardous waste		
Reported:	30.00 LB = 13.61 KG	Managed Onsite:	0.00 KG
Shipments:	04/16/2013 000191517VES COD980591184	30.00 LB	Fuel blending prior to energy recovery at another site
Waste Stream:	lab pack 6	Source:	Laboratory analytical wastes (used chemicals)
Waste Codes:	D001	CAS Codes:	
Form:	Lab packs with no acute hazardous waste		

Reported: 51.00 LB = 23.13 KG		Managed Onsite: 0.00 KG	
Shipments:	04/16/2013 000191518VES ILD098642424	31.00 LB	Incineration - thermal destruction other than use as a fuel
	10/30/2013 000724522VES ILD098642424	20.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream: lab pack 7		Source: Laboratory analytical wastes (used chemicals)	
Waste Codes: U096		CAS Codes:	
Form: Lab packs with no acute hazardous waste			
Reported: 10.00 LB = 4.54 KG		Managed Onsite: 0.00 KG	
Shipments:	04/16/2013 000191518VES ILD098642424	10.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream: lab pack 8		Source: Laboratory analytical wastes (used chemicals)	
Waste Codes: D002, D003		CAS Codes:	
Form: Lab packs with no acute hazardous waste			
Reported: 5.00 LB = 2.27 KG		Managed Onsite: 0.00 KG	
Shipments:	08/30/2013 000725537VES ILD098642424	5.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream: lab pack 9		Source: Laboratory analytical wastes (used chemicals)	
Waste Codes: D002		CAS Codes:	
Form: Lab packs with no acute hazardous waste			
Reported: 8.00 LB = 3.63 KG		Managed Onsite: 0.00 KG	
Shipments:	08/30/2013 000725540VES ILD098642424	8.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream: Soil and Debris		Source: Remediation waste generated under state approved cleanup authority	
Waste Codes: F002		CAS Codes:	
Form: Contaminated soil			
Reported: 4075.00 LB = 1848.01 KG		Managed Onsite: 0.00 KG	
Shipments:	06/25/2013 000144106VES COD980591184	1912.00 LB	Incineration - thermal destruction other than use as a fuel
	08/30/2013 000725535VES COD980591184	437.00 LB	Incineration - thermal destruction other than use as a fuel
	10/30/2013 000725547VES COD980591184	1526.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream: Trash/PPE from drilling operations		Source: Remediation waste generated under state approved cleanup authority	
Waste Codes: F002		CAS Codes:	
Form: Contaminated debris: paper, rags, wood, empty containers, etc.			
Reported: 1378.00 LB = 624.92 KG		Managed Onsite: 0.00 KG	

Shipments:	01/03/2013	000168088VES	ORD089452353	214.00 LB	Landfill or surface impoundment that will be closed as landfill
	04/16/2013	000191549VES	ORD089452353	45.00 LB	Landfill or surface impoundment that will be closed as landfill
	06/25/2013	000144107VES	ORD089452353	142.00 LB	Landfill or surface impoundment that will be closed as landfill
	08/30/2013	000725536VES	ORD089452353	87.00 LB	Landfill or surface impoundment that will be closed as landfill
	10/30/2013	000725548VES	ORD089452353	690.00 LB	Landfill or surface impoundment that will be closed as landfill


Waste Stream:	Site remediation derived (well) wastewater	Source:	Remediation waste generated under state approved cleanup authority
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Waste Codes:	D040, D043, F002	CAS Codes:	
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Form:	Very dilute aqueous waste containing more than 99% water
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Reported:	17138.00 LB = 7772.08 KG	Managed Onsite:	0.00 KG
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Shipments:	01/03/2013	000168087VES	COD980591184	918.00 LB	Incineration - thermal destruction other than use as a fuel
	04/16/2013	000191548VES	COD980591184	491.00 LB	Incineration - thermal destruction other than use as a fuel
	06/25/2013	000144106VES	COD980591184	2184.00 LB	Incineration - thermal destruction other than use as a fuel
	08/30/2013	000725535VES	COD980591184	1188.00 LB	Incineration - thermal destruction other than use as a fuel
	11/04/2013	000483467VES	COD980591184	11475.00 LB	Incineration - thermal destruction other than use as a fuel

 2012	SQG	14	7.126299	12/06/2012	02/21/2013
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Waste Stream:	Waste chromic acid	Source:	Laboratory analytical wastes (used chemicals)
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Waste Codes:	D002, D004, D007	CAS Codes:	7697-37-2, HF
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Form:	Spent concentrated acid
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Reported:	657.00 LB = 297.95 KG	Managed Onsite:	0.00 KG
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Shipments:	02/10/2012	003916919FLE	NED981723513	331.00 LB	Incineration - thermal destruction other than use as a fuel
	07/20/2012	005329223FLE	NED981723513	196.00 LB	Incineration - thermal destruction other than use as a fuel

Waste Stream:	Partially filled and empty aerosol cans	Source:	Painting and coating
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Waste Codes:	D001, D003	CAS Codes:	
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Form:	Paint, ink, lacquer, or varnish
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Reported:	192.00 LB = 87.07 KG	Managed Onsite:	0.00 KG
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Shipments:	04/19/2012	000168157VES	COD980591184	113.00 LB	Incineration - thermal destruction other than use as a fuel
	10/08/2012	000483795VES	COD980591184	79.00 LB	Incineration - thermal destruction other than use as a fuel

Source: Painting and coating			
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Waste Stream: Waste contaminated rags and debris, waste wax					
Waste Codes: D001, F005		CAS Codes:			
Form: Resins, tars, polymer or tarry sludge					
Reported: 7547.00 LB = 3422.56 KG		Managed Onsite: 0.00 KG			
Shipments:	01/19/2012	000483160VES	COD980591184	772.00 LB	Energy recovery or fuel blending
	04/19/2012	000168157VES	COD980591184	1982.00 LB	Energy recovery or fuel blending
	07/12/2012	000483719VES	COD980591184	2169.00 LB	Energy recovery or fuel blending
	10/08/2012	000483795VES	COD980591184	1924.00 LB	Energy recovery or fuel blending
Waste Stream: lab pack 1		Source: Laboratory analytical wastes (used chemicals)			
Waste Codes: D001, D035, F003, F005		CAS Codes:			
Form: Lab packs with no acute hazardous waste					
Reported: 11.00 LB = 4.99 KG		Managed Onsite: 0.00 KG			
Shipments:	04/19/2012	000168157VES	COD980591184	11.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream: lab pack 2		Source: Laboratory analytical wastes (used chemicals)			
Waste Codes: D007, D008, D011		CAS Codes:			
Form: Lab packs with no acute hazardous waste					
Reported: 11.00 LB = 4.99 KG		Managed Onsite: 0.00 KG			
Shipments:	07/12/2012	000483719VES	COD980591184	11.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream: lab pack 3		Source: Laboratory analytical wastes (used chemicals)			
Waste Codes: D002		CAS Codes:			
Form: Lab packs with no acute hazardous waste					
Reported: 9.00 LB = 4.08 KG		Managed Onsite: 0.00 KG			
Shipments:	04/19/2012	000168157VES	COD980591184	9.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream: lab pack 4		Source: Laboratory analytical wastes (used chemicals)			
Waste Codes: D008		CAS Codes:			
Form: Lab packs with no acute hazardous waste					
Reported: 17.00 LB = 7.71 KG		Managed Onsite: 0.00 KG			
Shipments:	04/19/2012	000168157VES	COD980591184	17.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream: Mixed facility lab waste		Source: Laboratory analytical wastes (used chemicals)			
Waste Codes: D002, D006, D007, D009, D011		CAS Codes:			

Form: Other inorganic liquid (specify in comments)

Reported: 30.00 LB = 13.61 KG		Managed Onsite: 0.00 KG	
Shipments:	04/19/2012 000168158VES AZ0000337360	15.00 LB	Metals recovery including retorting, smelting, chemical, etc.
	07/12/2012 000167440VES AZ0000337360	15.00 LB	Metals recovery including retorting, smelting, chemical, etc.
Waste Stream: titration lab waste		Source: Laboratory analytical wastes (used chemicals)	
Waste Codes: D001		CAS Codes:	
Form: Other inorganic liquid (specify in comments)			
Reported: 11.00 LB = 4.99 KG		Managed Onsite: 0.00 KG	
Shipments:	04/19/2012 000168157VES COD980591184	11.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream: Positive Photoresist		Source: Laboratory analytical wastes (used chemicals)	
Waste Codes: D001		CAS Codes:	
Form: Other organic liquid (specify in comments)			
Reported: 139.00 LB = 63.04 KG		Managed Onsite: 0.00 KG	
Shipments:	10/08/2012 000483795VES COD980591184	139.00 LB	Fuel blending prior to energy recovery at another site
Waste Stream: Chromic debris		Source: Cleanup of spill residues (Not part of an ongoing remediation project)	
Waste Codes: D007		CAS Codes:	
Form: Contaminated debris: paper, rags, wood, empty containers, etc.			
Reported: 87.00 LB = 39.45 KG		Managed Onsite: 0.00 KG	
Shipments:	01/19/2012 000483161VES ORD089452353	87.00 LB	Landfill or surface impoundment that will be closed as landfill
Waste Stream: Acid debris		Source: Cleanup of spill residues (Not part of an ongoing remediation project)	
Waste Codes: D002		CAS Codes:	
Form: Contaminated debris: paper, rags, wood, empty containers, etc.			
Reported: 0.00 LB = 0.00 KG		Managed Onsite: 0.00 KG	
Shipments:	01/19/2012 000483160VES COD980591184	44.00 LB	Fuel blending prior to energy recovery at another site
Waste Stream: Trash/PPE from drilling operations		Source: Remediation waste generated under state approved cleanup authority	
Waste Codes: F002		CAS Codes:	
Form: Contaminated debris: paper, rags, wood, empty containers, etc.			
Reported: 933.00 LB = 423.12 KG		Managed Onsite: 0.00 KG	
Shipments:	01/19/2012 000483163VES ORD089452353	148.00 LB	Landfill or surface impoundment that will be closed as landfill
	04/19/2012 000168159VES ORD089452353	270.00 LB	Landfill or surface impoundment that will be closed as landfill
	07/12/2012 000167441VES ORD089452353		

				197.00 LB	Landfill or surface impoundment that will be closed as landfill
10/08/2012	000483797VES	ORD089452353		266.00 LB	Landfill or surface impoundment that will be closed as landfill


Waste Stream:	Site remediation derived (well) wastewater	Source:	Remediation waste generated under state approved cleanup authority
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Waste Codes:	D040, D043, F002	CAS Codes:	
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Form:	Very dilute aqueous waste containing more than 99% water
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Reported:	6070.00 LB = 2752.74 KG	Managed Onsite:	0.00 KG
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Shipments:					
	01/19/2012	000483162VES	COD980591184	955.00 LB	Incineration - thermal destruction other than use as a fuel
	04/19/2012	000168155VES	COD980591184	1377.00 LB	Incineration - thermal destruction other than use as a fuel
	07/12/2012	000167442VES	COD980591184	1836.00 LB	Incineration - thermal destruction other than use as a fuel
	10/08/2012	000483796VES	COD980591184	1884.00 LB	Incineration - thermal destruction other than use as a fuel

 2011	LQG	27	283018.43620505	12/22/2011	02/22/2012
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Waste Stream:	Waste chromic acid	Source:	Laboratory analytical wastes (used chemicals)
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Waste Codes:	D002, D004, D007	CAS Codes:	7697-37-2, HF
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Form:	Spent concentrated acid
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Reported:	1592.00 LB = 721.97 KG	Managed Onsite:	0.00 KG
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Shipments:					
	01/25/2011	002959785FLE	NED981723513	145.00 LB	Incineration - thermal destruction other than use as a fuel
	03/18/2011	002959861FLE	NED981723513	387.00 LB	Incineration - thermal destruction other than use as a fuel
	06/03/2011	004460703FLE	NED981723513	242.00 LB	Incineration - thermal destruction other than use as a fuel
	08/31/2011	004461086FLE	NED981723513	29.00 LB	Incineration - thermal destruction other than use as a fuel
	11/09/2011	004797065FLE	NED981723513	824.00 LB	Incineration - thermal destruction other than use as a fuel

Waste Stream:	Mercury debris	Source:	Laboratory analytical wastes (used chemicals)
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Waste Codes:	D009	CAS Codes:	
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Form:	Contaminated debris: paper, rags, wood, empty containers, etc.
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Reported:	10.00 LB = 4.54 KG	Managed Onsite:	0.00 KG
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Shipments:					
	03/08/2011	002959785FLE	NED981723513	10.00 LB	Metals recovery including retorting, smelting, chemical, etc.

Waste Stream:	contaminated used oil	Source:	Oil changes and filter or battery replacement
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Waste Codes:	D039, D040, F002	CAS Codes:	
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Form:	Waste oil
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Reported:	76.00 GAL = 258.50 KG	Managed Onsite:	0.00 KG
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Shipments:	08/28/2011	002573671FLE	WAD981769110		
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				76.00 GAL	Fuel blending prior to energy recovery at another site
Waste Stream:	Absorbants contaminated with chlorinated oil			Source:	Cleanup of spill residues (Not part of an ongoing remediation project)
Waste Codes:	D039, D040, F002			CAS Codes:	
Form:	Other organic solids (specify in comments)				
Reported:	5.00 LB = 2.27 KG			Managed Onsite:	0.00 KG
Shipments:	08/29/2011	002573671FLE	WAD981769110	5.00 LB	Fuel blending prior to energy recovery at another site
Waste Stream:	Partially filled and empty aerosol cans			Source:	Painting and coating
Waste Codes:	D001, D003			CAS Codes:	
Form:	Paint, ink, lacquer, or varnish				
Reported:	147.00 LB = 66.66 KG			Managed Onsite:	0.00 KG
Shipments:	02/02/2011	000167102VES	TXD000838896	81.00 LB	Incineration - thermal destruction other than use as a fuel
	06/16/2011	000483558VES	TXD000838896	66.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:	Waste contaminated rags and debris, waste wax			Source:	Painting and coating
Waste Codes:	D001, F005			CAS Codes:	
Form:	Resins, tars, polymer or tarry sludge				
Reported:	8328.00 LB = 3776.75 KG			Managed Onsite:	0.00 KG
Shipments:	02/02/2011	000167102VES	MOD054018288	1497.00 LB	Energy recovery or fuel blending
	05/05/2011	000167170VES	MOD054018288	1623.00 LB	Energy recovery or fuel blending
	08/10/2011	000167242VES	MOD054018288	1301.00 LB	Energy recovery or fuel blending
	10/06/2011	000167339VES	MOD054018288	1147.00 LB	Energy recovery or fuel blending
	11/16/2011	000167390VES	MOD054018288	391.00 LB	Energy recovery or fuel blending
	03/17/2011	000483539VES	MOD054018288	1045.00 LB	Energy recovery or fuel blending
	06/16/2011	000483558VES	MOD054018288	1124.00 LB	Energy recovery or fuel blending
Waste Stream:	Acid debris			Source:	Cleanup of spill residues (Not part of an ongoing remediation project)
Waste Codes:	D002			CAS Codes:	
Form:	Contaminated debris: paper, rags, wood, empty containers, etc.				
Reported:	474.00 LB = 214.96 KG			Managed Onsite:	0.00 KG
Shipments:	05/05/2011	000167170VES	TXD000838896	16.00 LB	Incineration - thermal destruction other than use as a fuel
	08/10/2011	000167242VES	TXD000838896	76.00 LB	Incineration - thermal destruction other than use as a fuel
	10/06/2011	000167339VES	TXD000838896	71.00 LB	

					Incineration - thermal destruction other than use as a fuel
	11/16/2011	000167390VES	TXD000838896	5.00 LB	Incineration - thermal destruction other than use as a fuel
	03/17/2011	000483539VES	TXD000838896	262.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:	Bead Blast Dust			Source:	Other production or service-related processes (specify in comments)
Waste Codes:	D006, D008			CAS Codes:	
Form:	Other inorganic solids (specify in comments)				
Reported:	256.00 LB = 116.10 KG			Managed Onsite:	0.00 KG
Shipments:	02/02/2011	000167103VES	ORD089452353	256.00 LB	Landfill or surface impoundment that will be closed as landfill
Waste Stream:	Mixed facility lab waste			Source:	Laboratory analytical wastes (used chemicals)
Waste Codes:	D002, D006, D007, D009, D011			CAS Codes:	
Form:	Other inorganic liquid (specify in comments)				
Reported:	27.00 LB = 12.24 KG			Managed Onsite:	0.00 KG
Shipments:	05/05/2011	000167169VES	AZ0000337360	16.00 LB	Metals recovery including retorting, smelting, chemical, etc.
	10/06/2011	000167324VES	AZ0000337360	11.00 LB	Metals recovery including retorting, smelting, chemical, etc.
Waste Stream:	Flammable Paint - Loosepack			Source:	Painting and coating
Waste Codes:	D001			CAS Codes:	
Form:	Paint, ink, lacquer, or varnish				
Reported:	193.00 LB = 87.53 KG			Managed Onsite:	0.00 KG
Shipments:	03/17/2011	000483539VES	MOD054018288	193.00 LB	Energy recovery or fuel blending
Waste Stream:	lab pack 1			Source:	Laboratory analytical wastes (used chemicals)
Waste Codes:	D002			CAS Codes:	
Form:	Lab packs with no acute hazardous waste				
Reported:	20.00 LB = 9.07 KG			Managed Onsite:	0.00 KG
Shipments:	08/10/2011	000167242VES	TXD000838896	6.00 LB	Incineration - thermal destruction other than use as a fuel
	03/17/2011	000483539VES	TXD000838896	5.00 LB	Incineration - thermal destruction other than use as a fuel
	06/16/2011	000483558VES	TXD000838896	9.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:	lab pack 2			Source:	Laboratory analytical wastes (used chemicals)
Waste Codes:	D001			CAS Codes:	
Form:	Lab packs with no acute hazardous waste				

Reported: 5.00 LB = 2.27 KG				Managed Onsite: 0.00 KG	
Shipments:					
	03/17/2011	000483539VES	ILD098642424	5.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream: lab pack 3				Source: Laboratory analytical wastes (used chemicals)	
Waste Codes: D001, D035				CAS Codes:	
Form: Lab packs with no acute hazardous waste					
Reported: 162.00 LB = 73.47 KG				Managed Onsite: 0.00 KG	
Shipments:					
	03/17/2011	000483539VES	ILD098642424	146.00 LB	Incineration - thermal destruction other than use as a fuel
	06/16/2011	000483558VES	ILD098642424	16.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream: lab pack 4				Source: Laboratory analytical wastes (used chemicals)	
Waste Codes: D001, D003				CAS Codes:	
Form: Lab packs with no acute hazardous waste					
Reported: 5.00 LB = 2.27 KG				Managed Onsite: 0.00 KG	
Shipments:					
	03/17/2011	000483539VES	TXD000838896	5.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream: lab pack 5				Source: Laboratory analytical wastes (used chemicals)	
Waste Codes: D002, D010				CAS Codes:	
Form: Lab packs with no acute hazardous waste					
Reported: 10.00 LB = 4.54 KG				Managed Onsite: 0.00 KG	
Shipments:					
	03/17/2011	000483539VES	ILD098642424	10.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream: lab pack 6				Source: Laboratory analytical wastes (used chemicals)	
Waste Codes: D001, D035, F003, U159				CAS Codes:	
Form: Lab packs with no acute hazardous waste					
Reported: 54.00 LB = 24.49 KG				Managed Onsite: 0.00 KG	
Shipments:					
	06/16/2011	000483558VES	COD980591184	54.00 LB	Fuel blending prior to energy recovery at another site
Waste Stream: Lab pack 7				Source: Laboratory analytical wastes (used chemicals)	
Waste Codes: D001, D002				CAS Codes:	
Form: Lab packs with no acute hazardous waste					
Reported: 5.00 LB = 2.27 KG				Managed Onsite: 0.00 KG	
Shipments:					
	06/16/2011	000483558VES	TXD000838896	5.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream: Lab pack 8				Source: Laboratory analytical wastes (used chemicals)	
Waste Codes: U096				CAS Codes:	

Form: Lab packs with no acute hazardous waste					
Reported: 5.00 LB = 2.27 KG			Managed Onsite: 0.00 KG		
Shipments:					
06/16/2011 000483558VES			TXD000838896	5.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream: Site remediation derived (well) wastewater					
Waste Codes: D040, D043, F002			CAS Codes:		
Form: Very dilute aqueous waste containing more than 99% water					
Reported: 16272.00 LB = 7379.35 KG			Managed Onsite: 0.00 KG		
Shipments:					
02/02/2011 000167100VES			ILD098642424	485.00 LB	Incineration - thermal destruction other than use as a fuel
05/05/2011 000167167VES			ILD098642424	971.00 LB	Incineration - thermal destruction other than use as a fuel
06/02/2011 000167178VES			ILD098642424	1320.00 LB	Incineration - thermal destruction other than use as a fuel
08/10/2011 000167243VES			ILD098642424	1358.00 LB	Incineration - thermal destruction other than use as a fuel
08/19/2011 000167286VES			ILD098642424	1341.00 LB	Incineration - thermal destruction other than use as a fuel
10/06/2011 000167325VES			ILD098642424	892.00 LB	Incineration - thermal destruction other than use as a fuel
11/16/2011 000167389VES			ILD098642424	918.00 LB	Incineration - thermal destruction other than use as a fuel
04/01/2011 000333998VES			ILD098642424	8115.00 LB	Incineration - thermal destruction other than use as a fuel
03/17/2011 000483537VES			ILD098642424	422.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream: Site remediation derived (well) wastewater w/EHC					
Waste Codes: D040, D043, F002			CAS Codes:		
Form: Very dilute aqueous waste containing more than 99% water					
Reported: 14236.00 LB = 6456.03 KG			Managed Onsite: 0.00 KG		
Shipments:					
06/02/2011 000167178VES			TXD000838896	6160.00 LB	Incineration - thermal destruction other than use as a fuel
06/16/2011 000483556VES			TXD000838896	4730.00 LB	Incineration - thermal destruction other than use as a fuel
05/05/2011 000167167VES			COD980591184	3346.00 LB	Fuel blending prior to energy recovery at another site
Waste Stream: Trash/PPE from drilling operations					
Waste Codes: F002			CAS Codes:		

Form: Contaminated debris: paper, rags, wood, empty containers, etc.

Reported: 1036.00 LB = 469.83 KG				Managed Onsite: 0.00 KG	
Shipments:	02/02/2011	000167101VES	ORD089452353	75.00 LB	Landfill or surface impoundment that will be closed as landfill
	05/05/2011	000167168VES	ORD089452353	136.00 LB	Landfill or surface impoundment that will be closed as landfill
	06/02/2011	000167179VES	ORD089452353	113.00 LB	Landfill or surface impoundment that will be closed as landfill
	08/10/2011	000167244VES	ORD089452353	96.00 LB	Landfill or surface impoundment that will be closed as landfill
	08/19/2011	000167287VES	ORD089452353	55.00 LB	Landfill or surface impoundment that will be closed as landfill
	10/06/2011	000167326VES	ORD089452353	117.00 LB	Landfill or surface impoundment that will be closed as landfill
	04/01/2011	000333997VES	ORD089452353	50.00 LB	Landfill or surface impoundment that will be closed as landfill
	03/17/2011	000483538VES	ORD089452353	89.00 LB	Landfill or surface impoundment that will be closed as landfill
	06/16/2011	000483557VES	ORD089452353	103.00 LB	Landfill or surface impoundment that will be closed as landfill
	11/16/2011	000167388VES	ORD089452353	84.00 LB	Landfill or surface impoundment that will be closed as landfill

Waste Stream:	Trash/PPE from drilling equipment cleaning	Source:	Remediation waste generated under state approved cleanup authority
Waste Codes:	F002	CAS Codes:	
Form:	Other organic solids (specify in comments)		

Reported: 67.00 LB = 30.38 KG				Managed Onsite: 0.00 KG	
Shipments:	11/16/2011	000167388VES	ORD089452353	67.00 LB	Landfill or surface impoundment that will be closed as landfill

Waste Stream:	Remediation soil and debris	Source:	Remediation waste generated under state approved cleanup authority
Waste Codes:	F002	CAS Codes:	
Form:	Contaminated soil		

Reported: 2960.00 LB = 1342.36 KG			Managed Onsite: 0.00 KG		
Shipments:	04/01/2011	000333998VES	TXD000838896	2960.00 LB	Incineration - thermal destruction other than use as a fuel

Waste Stream:	Remediation soil, gravel, and debris	Source:	Remediation waste generated under state approved cleanup authority
Waste Codes:	F002	CAS Codes:	
Form:	Contaminated soil		


Reported: 772.00 LB = 350.10 KG				Managed Onsite: 0.00 KG	
Shipments:	05/05/2011	000167167VES	TXD000838896	772.00 LB	Incineration - thermal destruction other than use as a fuel

Waste Stream:	equipment drilling water with muratic acid	Source:	Remediation waste generated under state approved cleanup authority
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Waste Codes:	CAS Codes:
Form: Acidic aqueous wastes less than 5% acid	
Reported: 138.00 LB = 62.58 KG	Managed Onsite: 0.00 KG
Shipments:	
10/06/2011 000167325VES TXD000838896	138.00 LB Incineration - thermal destruction other than use as a fuel

Waste Stream: RCRA exempt waste water (CAD) comprised of nitrate and flouride ions	Source: Etching
Waste Codes: D002	CAS Codes: 14797-55-8
Form: Acidic aqueous wastes less than 5% acid	
Reported: 74727000.00 GAL = 282801155.60 KG	Managed Onsite: 282801155.60 KG
Shipments:	

Waste Stream: RCRA exempt wastewater (CCD) comprised of NaOH and potassium hydroxide	Source: Stripping and acid or caustic cleaning
Waste Codes: D002	CAS Codes:
Form: Caustic aqueous waste without cyanides	
Reported: 51740.00 GAL = 195807.83 KG	Managed Onsite: 195807.83 KG
Shipments:	

 2010	LQG	21	275462.2431952	12/03/2010	02/17/2011
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Waste Stream: Waste chromic acid	Source: Laboratory analytical wastes (used chemicals)
Waste Codes: D002, D004, D007	CAS Codes: 7697-37-2, HF
Form: Spent concentrated acid	
Reported: 1255.00 LB = 569.14 KG	Managed Onsite: 0.00 KG
Shipments:	
03/18/2010 006579477JJK WAD991281767	281.00 LB Accumulation prior to discharge to sewer/POTW or surface water under NPDES
06/15/2010 007079893JJK WAD991281767	240.00 LB Accumulation prior to discharge to sewer/POTW or surface water under NPDES
08/31/2010 003497586FLE NED981723513	180.00 LB Incineration - thermal destruction other than use as a fuel
11/04/2010 00349781FLE NED981723513	407.00 LB Incineration - thermal destruction other than use as a fuel

Waste Stream: Waste contaminated rags and debris, waste wax	Source: Painting and coating
Waste Codes: D001, F005	CAS Codes:
Form: Resins, tars, polymer or tarry sludge	
Reported: 9195.20 LB = 4170.02 KG	Managed Onsite: 0.00 KG
Shipments:	
03/16/2010 000333697VES COD980591184	1050.00 LB Incineration - thermal destruction other than use as a fuel
04/27/2010 000333752VES COD980591184	1020.00 LB Incineration - thermal destruction other than use as a fuel
06/17/2010 000333821VES COD980591184	1530.00 LB

					Incineration - thermal destruction other than use as a fuel
08/02/2010	000167008VES	COD980591184	800.00 LB		Incineration - thermal destruction other than use as a fuel
10/15/2010	000167024VES	COD980591184	350.00 LB		Incineration - thermal destruction other than use as a fuel
12/02/2010	000167040VES	COD980591184	1041.00 LB		Incineration - thermal destruction other than use as a fuel
02/10/2010	001364742JJJ	IDD073114654	3004.20 LB		Landfill or surface impoundment that will be closed as landfill

Waste Stream:	waste wax and debris			Source:	Painting and coating
Waste Codes:	F005			CAS Codes:	
Form:	Contaminated debris: paper, rags, wood, empty containers, etc.				
Reported:	2052.00 LB = 930.58 KG			Managed Onsite:	0.00 KG
Shipments:					
	09/24/2010	002959513FLE	NED981723513	1600.00 LB	Incineration - thermal destruction other than use as a fuel
	11/04/2010	00349781FLE	NED981723513	452.00 LB	Incineration - thermal destruction other than use as a fuel

Waste Stream:	Mixed facility lab waste	Source:	Laboratory analytical wastes (used chemicals)		
Waste Codes:	D002, D006, D007, D009, D011		CAS Codes:		
Form:	Other inorganic liquid (specify in comments)				
Reported:	37.00 LB = 16.78 KG		Managed Onsite:	0.00 KG	
Shipments:	03/16/2010	000333699VES	AZ0000337360	8.00 LB	Metals recovery including retorting, smelting, chemical, etc.
	06/17/2010	000333822VES	AZ0000337360	14.00 LB	Metals recovery including retorting, smelting, chemical, etc.
	12/14/2010	002959556FLE	NED981723513	15.00 LB	Metals recovery including retorting, smelting, chemical, etc.

Waste Stream:	Partially filled and empty aerosol cans			Source:	Painting and coating
Waste Codes:	D001, D003			CAS Codes:	
Form:	Paint, ink, lacquer, or varnish				
Reported:	72.00 LB = 32.65 KG			Managed Onsite:	0.00 KG
Shipments:	10/15/2010	000167024VES	COD980591184	50.00 LB	Incineration - thermal destruction other than use as a fuel
	02/10/2010	001364742JJJ	IDD073114654	25.00 LB	Landfill or surface impoundment that will be closed as landfill

Waste Stream:	Mercury debris	Source:	Laboratory analytical wastes (used chemicals)
Waste Codes:	D009	CAS Codes:	
Form:	Contaminated debris: paper, rags, wood, empty containers, etc.		
Reported:	4.00 LB = 1.81 KG	Managed Onsite:	0.00 KG

Shipments:		02/10/2010 001364742JJJ	IDD073114654	5.00 LB	Landfill or surface impoundment that will be closed as landfill
Waste Stream:	Acid debris			Source:	Cleanup of spill residues (Not part of an ongoing remediation project)
Waste Codes:	D002			CAS Codes:	
Form: Contaminated debris: paper, rags, wood, empty containers, etc.					
Reported: 582.00 LB = 263.94 KG			Managed Onsite: 0.00 KG		
Shipments:		03/16/2010 000333697VES	COD980591184	20.00 LB	Incineration - thermal destruction other than use as a fuel
		04/27/2010 000333752VES	COD980591184	50.00 LB	Incineration - thermal destruction other than use as a fuel
		08/02/2010 000167008VES	COD980591184	320.00 LB	Incineration - thermal destruction other than use as a fuel
		10/15/2010 000167024VES	COD980591184	132.00 LB	Incineration - thermal destruction other than use as a fuel
		12/14/2010 002959558FLE	ORD089452353	30.00 LB	Landfill or surface impoundment that will be closed as landfill
		02/10/2010 001364742JJJ	IDD073114654	30.00 LB	Landfill or surface impoundment that will be closed as landfill
Waste Stream:	Bead Blast Dust			Source:	Other production or service-related processes (specify in comments)
Waste Codes:	D006, D008			CAS Codes:	
Form: Other inorganic solids (specify in comments)					
Reported: 170.00 LB = 77.09 KG			Managed Onsite: 0.00 KG		
Shipments:		08/02/2010 000167009VES	ORD089452353	170.00 LB	Landfill or surface impoundment that will be closed as landfill
Waste Stream:	Flammable Paint - Loosepack			Source:	Painting and coating
Waste Codes:	D001			CAS Codes:	
Form: Paint, ink, lacquer, or varnish					
Reported: 120.00 LB = 54.42 KG			Managed Onsite: 0.00 KG		
Shipments:		10/15/2010 000167024VES	COD980591184	120.00 LB	Fuel blending prior to energy recovery at another site
Waste Stream:	Positive Photoresist			Source:	Laboratory analytical wastes (used chemicals)
Waste Codes:	D001			CAS Codes:	
Form: Other organic liquid (specify in comments)					
Reported: 82.00 LB = 37.19 KG			Managed Onsite: 0.00 KG		
Shipments:		12/02/2010 000167040VES	COD980591184	82.00 LB	Fuel blending prior to energy recovery at another site
Waste Stream:	Lab pack			Source:	Laboratory analytical wastes (used chemicals)
Waste Codes:	D001			CAS Codes:	
Form: Lab packs with no acute hazardous waste					

Reported: 10.00 LB = 4.54 KG			Managed Onsite: 0.00 KG	
Shipments:				
	03/16/2010 000333697VES COD980591184	10.00 LB	Incineration - thermal destruction other than use as a fuel	
Waste Stream:	pH probe		Source:	Process equipment change-out or discontinue use of equipment
Waste Codes:	D008		CAS Codes:	
Form: Other inorganic solids (specify in comments)				
Reported: 4.00 LB = 1.81 KG			Managed Onsite: 0.00 KG	
Shipments:				
	06/17/2010 000333822VES AZ0000337360	4.00 LB	Metals recovery including retorting, smelting, chemical, etc.	
Waste Stream:	AA Hollow Cathode Lamps		Source:	Process equipment change-out or discontinue use of equipment
Waste Codes:	D004, D005, D006, D007, D008, D009		CAS Codes:	
Form: Contaminated debris: paper, rags, wood, empty containers, etc.				
Reported: 51.00 LB = 23.13 KG			Managed Onsite: 0.00 KG	
Shipments:				
	03/16/2010 000333698VES ORD089452353	50.00 LB	Landfill or surface impoundment that will be closed as landfill	
	06/17/2010 000333823VES ORD089452353	1.00 LB	Landfill or surface impoundment that will be closed as landfill	
Waste Stream:	Poisonous aerosol cans		Source:	Discarding off-specification or out-of-date chemicals or products
Waste Codes:	D003, U226		CAS Codes:	
Form: Compressed gases				
Reported: 20.00 LB = 9.07 KG			Managed Onsite: 0.00 KG	
Shipments:				
	10/15/2010 000167024VES COD980591184	20.00 LB	Incineration - thermal destruction other than use as a fuel	
Waste Stream:	Paint Solvent Debris		Source:	Cleanup of spill residues (Not part of an ongoing remediation project)
Waste Codes:	D001		CAS Codes:	
Form: Contaminated debris: paper, rags, wood, empty containers, etc.				
Reported: 1.00 LB = 0.45 KG			Managed Onsite: 0.00 KG	
Shipments:				
	10/15/2010 000167024VES COD980591184	1.00 LB	Fuel blending prior to energy recovery at another site	
Waste Stream:	Trash/PPE from drilling operations		Source:	Remediation waste generated under state approved cleanup authority
Waste Codes:	F002		CAS Codes:	
Form: Contaminated debris: paper, rags, wood, empty containers, etc.				
Reported: 1613.00 LB = 731.50 KG			Managed Onsite: 0.00 KG	
Shipments:				
	03/16/2010 000333696VES ORD089452353	130.00 LB	Landfill or surface impoundment that will be closed as landfill	
	04/27/2010 000333750VES ORD089452353	120.00 LB	Landfill or surface impoundment that will be closed as landfill	
	06/17/2010 000333820VES ORD089452353	250.00 LB	Landfill or surface impoundment that will be closed as landfill	

	08/02/2010	000167007VES	ORD089452353	160.00 LB	Landfill or surface impoundment that will be closed as landfill
	10/15/2010	000167022VES	ORD089452353	80.00 LB	Landfill or surface impoundment that will be closed as landfill
	12/02/2010	000167039VES	ORD089452353	843.00 LB	Landfill or surface impoundment that will be closed as landfill
Waste Stream:	Site remediation derived (well) wastewater			Source:	Remediation waste generated under state approved cleanup authority
Waste Codes:	D040, D043, F002			CAS Codes:	
Form:	Very dilute aqueous waste containing more than 99% water				
Reported:	9347.00 LB = 4238.86 KG			Managed Onsite:	0.00 KG
Shipments:					
	03/16/2010	000333695VES	COD980591184	800.00 LB	Incineration - thermal destruction other than use as a fuel
	04/27/2010	000333751VES	COD980591184	400.00 LB	Incineration - thermal destruction other than use as a fuel
	06/17/2010	000333819VES	COD980591184	400.00 LB	Incineration - thermal destruction other than use as a fuel
	08/02/2010	000167006VES	COD980591184	420.00 LB	Incineration - thermal destruction other than use as a fuel
	09/22/2010	000333961VES	COD980591184	1600.00 LB	Incineration - thermal destruction other than use as a fuel
	10/15/2010	000167023VES	COD980591184	800.00 LB	Incineration - thermal destruction other than use as a fuel
	12/02/2010	000167038VES	COD980591184	4477.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:	Remediation soil and debris			Source:	Remediation waste generated under state approved cleanup authority
Waste Codes:	F002			CAS Codes:	
Form:	Contaminated soil				
Reported:	638.00 LB = 289.33 KG			Managed Onsite:	0.00 KG
Shipments:					
	12/02/2010	000167038VES	COD980591184	638.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:	Spent Paint Related Material			Source:	Painting and coating
Waste Codes:	D001, D035, F003, F005			CAS Codes:	
Form:	Concentrated non-halogenated (e.g., non-chlorinated) solvent				
Reported:	55.00 GAL = 187.07 KG			Managed Onsite:	0.00 KG
Shipments:	08/11/2010	001415574JJJ	WAD981769110	55.00 GAL	Solvents recovery
Waste Stream:	RCRA exempt waste water (CAD) comprised of nitrate and fluoride ions			Source:	Etching
Waste Codes:	D002			CAS Codes:	14797-55-8
Form:	Acidic aqueous wastes less than 5% acid				

Reported: 72734000.00 GAL = 275258731.81 KG **Managed Onsite:** 275258731.81 KG

Shipments:

Waste Stream:	RCRA exempt wastewater (CCD) comprised of NaOH and potassium hydroxide	Source:	Stripping and acid or caustic cleaning
Waste Codes:	D002	CAS Codes:	
Form:	Caustic aqueous waste without cyanides		

Reported: 50700.00 GAL = 191872.00 KG **Managed Onsite:** 191872.00 KG

Shipments:

Waste Stream:	Spent Petroleum Naptha	Source:	Dip, flush or spray rinsing
Waste Codes:	D001, D008, D018, D035, D039, F001	CAS Codes:	
Form:	Paint thinner or petroleum distillates		

Reported: 5.00 GAL = 17.01 KG **Managed Onsite:** 0.00 KG

Shipments:	09/09/2009	002571935	WAD981769110	5.00 GAL	Solvents recovery
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Waste Stream:	Waste chromic acid	Source:	Laboratory analytical wastes (used chemicals)
Waste Codes:	D002, D007	CAS Codes:	
Form:	Spent concentrated acid		

Reported: 1584.00 LB = 718.34 KG **Managed Onsite:** 0.00 KG

Shipments:	01/22/2009	004965015JJJ	WAD991281767	240.00 LB	Accumulation prior to discharge to sewer/POTW or surface water under NPDES
	04/20/2009	004812099JJJ	WAD991281767	50.00 LB	Accumulation prior to discharge to sewer/POTW or surface water under NPDES
	07/21/2009	004205713JJJ	WAD991281767	521.00 LB	Accumulation prior to discharge to sewer/POTW or surface water under NPDES
	10/15/2009	005605155JJJ	WAD991281767	479.00 LB	Accumulation prior to discharge to sewer/POTW or surface water under NPDES
	12/29/2009	004971695JJJ	WAD991281767	274.00 LB	Accumulation prior to discharge to sewer/POTW or surface water under NPDES

Waste Stream:	Partially filled and empty aerosol cans	Source:	Painting and coating
Waste Codes:	D001, D003	CAS Codes:	
Form:	Paint, ink, lacquer, or varnish		

Reported: 203.00 LB = 92.06 KG **Managed Onsite:** 0.00 KG

Shipments:	09/17/2009	000374395VES	COD980591184	200.00 LB	Incineration - thermal destruction other than use as a fuel
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Waste Stream:	Waste contaminated rags and debris, waste wax	Source:	Painting and coating
Waste Codes:	D001, F005	CAS Codes:	

Reported: 8860.00 LB = 4018.01 KG			Managed Onsite: 0.00 KG		
Shipments:	01/13/2009	000374008VES	COD980591184	600.00 LB	Energy recovery or fuel blending
	02/13/2009	000374041VES	COD980591184	160.00 LB	Energy recovery or fuel blending
	04/09/2009	000167929VES	COD980591184	400.00 LB	Energy recovery or fuel blending
	04/21/2009	000167968VES	COD980591184	400.00 LB	Energy recovery or fuel blending
	05/20/2009	000374171VES	COD980591184	400.00 LB	Energy recovery or fuel blending
	06/25/2009	000374292VES	COD980591184	374.00 LB	Energy recovery or fuel blending
	06/25/2009	000374292VES	COD980591184	376.00 LB	Energy recovery or fuel blending
	07/10/2009	000374311VES	COD980591184	200.00 LB	Energy recovery or fuel blending
	08/12/2009	000374346VES	COD980591184	600.00 LB	Energy recovery or fuel blending
	09/17/2009	000374395VES	COD980591184	1000.00 LB	Energy recovery or fuel blending
	09/17/2009	000374395VES	COD980591184	300.00 LB	Energy recovery or fuel blending
	10/08/2009	000374418VES	COD980591184	1000.00 LB	Energy recovery or fuel blending
	10/08/2009	000374418VES	COD980591184	200.00 LB	Energy recovery or fuel blending
	10/28/2009	000374449VES	COD980591184	80.00 LB	Energy recovery or fuel blending
	10/28/2009	000374449VES	COD980591184	1200.00 LB	Energy recovery or fuel blending
	12/03/2009	000333537VES	COD980591184	85.00 LB	Energy recovery or fuel blending
	12/03/2009	000333537VES	COD980591184	75.00 LB	Energy recovery or fuel blending
	12/03/2009	000333537VES	COD980591184	100.00 LB	Energy recovery or fuel blending
	12/03/2009	000333537VES	COD980591184	600.00 LB	Energy recovery or fuel blending
	12/23/2009	000333589VES	COD980591184	410.00 LB	Energy recovery or fuel blending

Waste Stream: Chrome debris	Source: Cleanup of spill residues (Not part of an ongoing remediation project)
Waste Codes: D007	CAS Codes:
Form: Contaminated debris: paper, rags, wood, empty containers, etc.	

Reported: 58.00 LB = 26.30 KG				Managed Onsite: 0.00 KG	
Shipments:	01/13/2009	000374009VE	ORD089452353	55.00 LB	Landfill or surface impoundment that will be closed as landfill
	07/10/2009	000374204VES	ORD089452353	3.00 LB	Landfill or surface impoundment that will be closed as landfill

Waste Stream: Acid debris	Source: Cleanup of spill residues (Not part of an ongoing remediation project)
Waste Codes: D002	CAS Codes:
Form: Contaminated debris: paper, rags, wood, empty containers, etc.	

Reported: 320.00 LB = 145.12 KG			Managed Onsite: 0.00 KG	
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Shipments:	01/13/2009 000374008VES COD980591184	35.00 LB	Incineration - thermal destruction other than use as a fuel
	02/13/2009 000374041VES COD980591184	140.00 LB	Incineration - thermal destruction other than use as a fuel
	07/10/2009 000374311VES COD980591184	40.00 LB	Incineration - thermal destruction other than use as a fuel
	09/17/2009 000374395VES COD980591184	65.00 LB	Incineration - thermal destruction other than use as a fuel
	12/03/2009 000333537VES COD980591184	40.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:	Lab pack	Source:	Laboratory analytical wastes (used chemicals)
Waste Codes:	D001, D035	CAS Codes:	
Form:	Lab packs with no acute hazardous waste		
Reported:	20.00 LB = 9.07 KG	Managed Onsite:	0.00 KG
Shipments:	09/17/2009 000334001VES COD980591184	20.00 LB	Fuel blending prior to energy recovery at another site
Waste Stream:	Berilyum Tubes	Source:	Process equipment change-out or discontinue use of equipment
Waste Codes:	D007, D008, D011	CAS Codes:	
Form:	Other inorganic solids (specify in comments)		
Reported:	10.00 LB = 4.54 KG	Managed Onsite:	0.00 KG
Shipments:	02/17/2009 000374053VES ORD089452353	10.00 LB	Landfill or surface impoundment that will be closed as landfill
Waste Stream:	Caustic Debris	Source:	Cleanup of spill residues (Not part of an ongoing remediation project)
Waste Codes:	D003	CAS Codes:	
Form:	Contaminated debris: paper, rags, wood, empty containers, etc.		
Reported:	100.00 LB = 45.35 KG	Managed Onsite:	0.00 KG
Shipments:	09/17/2009 000374395VES COD980591184	100.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:	Mercury debris	Source:	Cleanup of spill residues (Not part of an ongoing remediation project)
Waste Codes:	D009	CAS Codes:	
Form:	Contaminated debris: paper, rags, wood, empty containers, etc.		
Reported:	5.00 LB = 2.27 KG	Managed Onsite:	0.00 KG
Shipments:	07/10/2009 000374205VES AZ0000337360	3.00 LB	Metals recovery including retorting, smelting, chemical, etc.
	04/09/2009 000167930VES AZ0000337360	1.00 LB	Metals recovery including retorting, smelting, chemical, etc.
Waste Stream:	MAPP Gas Cylinder	Source:	Discarding off-specification or out-of-date chemicals or products
D001			

Waste Codes:	CAS Codes:		
Form: Compressed gases			
Reported: 2.00 LB = 0.91 KG	Managed Onsite: 0.00 KG		
Shipments:	01/13/2009 000374008VES COD980591184	2.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream: Trash/PPE from drilling operations	Source: Remediation waste generated under state approved cleanup authority		
Waste Codes: F002	CAS Codes:		
Form: Contaminated debris: paper, rags, wood, empty containers, etc.			
Reported: 25155.00 LB = 11407.79 KG	Managed Onsite: 0.00 KG		
Shipments:	01/13/2009 000374011VES ORD089452353	35.00 LB	Landfill or surface impoundment that will be closed as landfill
	01/15/2009 000374018VES ORD089452353	20200.00 LB	Landfill or surface impoundment that will be closed as landfill
	03/06/2009 000374082VES ORD089452353	4400.00 LB	Landfill or surface impoundment that will be closed as landfill
	06/30/2009 000374299VES ORD089452353	50.00 LB	Landfill or surface impoundment that will be closed as landfill
	07/10/2009 000374313VES ORD089452353	40.00 LB	Landfill or surface impoundment that will be closed as landfill
	08/13/2009 000374345VES ORD089452353	60.00 LB	Landfill or surface impoundment that will be closed as landfill
	09/17/2009 000374394VES ORD089452353	100.00 LB	Landfill or surface impoundment that will be closed as landfill
	10/08/2009 000374419VES ORD089452353	100.00 LB	Landfill or surface impoundment that will be closed as landfill
	10/28/2009 000374451VES ORD089452353	60.00 LB	Landfill or surface impoundment that will be closed as landfill
	12/03/2009 000333539VES ORD089452353	40.00 LB	Landfill or surface impoundment that will be closed as landfill
	12/23/2009 000333590VES ORD089452353	50.00 LB	Landfill or surface impoundment that will be closed as landfill
Waste Stream: Site remediation derived (well) wastewater	Source: Remediation waste generated under state approved cleanup authority		
Waste Codes: D040, D043, F002	CAS Codes:		
Form: Very dilute aqueous waste containing more than 99% water			
Reported: 91892.00 LB = 41673.02 KG	Managed Onsite: 0.00 KG		
Shipments:	01/16/2009 000374019VES TXD000838896	39600.00 LB	Incineration - thermal destruction other than use as a fuel
	03/17/2009 000374097VES TXD000838896	22032.00 LB	Incineration - thermal destruction other than use as a fuel
	02/13/2009 000374040VES COD980591184		

			8400.00 LB	Incineration - thermal destruction other than use as a fuel
03/17/2009	000374098VES	COD980591184	4400.00 LB	Incineration - thermal destruction other than use as a fuel
04/09/2009	000167931VES	COD980591184	3850.00 LB	Incineration - thermal destruction other than use as a fuel
04/21/2009	000167967VES	COD980591184	4590.00 LB	Incineration - thermal destruction other than use as a fuel
05/20/2009	000374169VES	COD980591184	500.00 LB	Incineration - thermal destruction other than use as a fuel
05/20/2009	000374169VES	COD980591184	800.00 LB	Incineration - thermal destruction other than use as a fuel
06/25/2009	000374290VES	COD980591184	1060.00 LB	Incineration - thermal destruction other than use as a fuel
07/10/2009	000374312VES	COD980591184	2100.00 LB	Incineration - thermal destruction other than use as a fuel
08/12/2009	000374344VES	COD980591184	360.00 LB	Incineration - thermal destruction other than use as a fuel
08/12/2009	000374344VES	COD980591184	2190.00 LB	Incineration - thermal destruction other than use as a fuel
09/17/2009	000374392VES	COD980591184	500.00 LB	Incineration - thermal destruction other than use as a fuel
10/28/2009	000374450VES	COD980591184	400.00 LB	Incineration - thermal destruction other than use as a fuel
12/03/2009	000333538VES	COD980591184	800.00 LB	Incineration - thermal destruction other than use as a fuel
12/23/2009	000333591VES	COD980591184	350.00 LB	Incineration - thermal destruction other than use as a fuel


Waste Stream:	RCRA exempt waste water (CAD) comprised of nitrate and flouride ions	Source:	Etching
Waste Codes:	D002	CAS Codes:	14797-55-8
Form:	Acidic aqueous wastes less than 5% acid		
Reported:	70966000.00 GAL = 268567810.94 KG	Managed Onsite:	268567810.94 KG
Shipments:			
Waste Stream:	RCRA exempt wastewater (CCD) comprised of NaOH and potassium hydroxide	Source:	Stripping and acid or caustic cleaning
Waste Codes:	D002	CAS Codes:	
Form:	Caustic aqueous waste without cyanides		
Reported:	48520.00 GAL = 183621.88 KG	Managed Onsite:	183621.88 KG
Shipments:			
Waste Stream:	Mixed facility lab waste	Source:	Laboratory analytical wastes (used chemicals)
Waste Codes:	D002, D006, D007, D009, D011	CAS Codes:	

Form: Other inorganic liquid (specify in comments)

Reported: 55.00 LB = 24.94 KG		Managed Onsite: 0.00 KG	
Shipments:	04/09/2009 000167930VES AZ0000337360	15.00 LB	Metals recovery including retorting, smelting, chemical, etc.
	09/17/2009 000374423VES AZ0000337360	40.00 LB	Metals recovery including retorting, smelting, chemical, etc.

Waste Stream:	Remediation soil and debris	Source:	Remediation waste generated under state approved cleanup authority
Waste Codes:	F002	CAS Codes:	
Form:	Contaminated soil		

Reported: 46950.00 LB = 21291.83 KG		Managed Onsite: 0.00 KG	
Shipments:	01/15/2009 000334017VES ORD089452353	4100.00 LB	Landfill or surface impoundment that will be closed as landfill
	02/17/2009 000374054VES ORD089452353	28000.00 LB	Landfill or surface impoundment that will be closed as landfill
	05/20/2009 000374169VES COD980591184	1500.00 LB	Incineration - thermal destruction other than use as a fuel
	05/20/2009 000374170VES COD980591184	10200.00 LB	Incineration - thermal destruction other than use as a fuel
	06/25/2009 000374290VES COD980591184	1900.00 LB	Incineration - thermal destruction other than use as a fuel
	06/30/2009 000374298VES COD980591184	350.00 LB	Incineration - thermal destruction other than use as a fuel
	08/12/2009 000374344VES COD980591184	900.00 LB	Incineration - thermal destruction other than use as a fuel

	2008	LQG	24	286984.448155813	12/17/2008	02/20/2009
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Waste Stream:	Waste chromic acid	Source:	Laboratory analytical wastes (used chemicals)
Waste Codes:	D002, D007	CAS Codes:	
Form:	Spent concentrated acid		

Reported: 1774.00 LB = 804.51 KG		Managed Onsite: 0.00 KG	
Shipments:	02/20/2008 003618586JJJ WAD991281767	512.00 LB	Accumulation prior to discharge to sewer/POTW or surface water under NPDES
	05/13/2008 004049258JJJ WAD991281767	526.00 LB	Accumulation prior to discharge to sewer/POTW or surface water under NPDES
	08/04/2008 004050337JJJ WAD991281767	274.00 LB	Accumulation prior to discharge to sewer/POTW or surface water under NPDES
	10/28/2008 004207343JJJ WAD991281767	462.00 LB	Accumulation prior to discharge to sewer/POTW or surface water under NPDES

Waste Stream:	Site investigation derived (well) wastewater	Source:	Remediation waste generated under state approved cleanup authority
Waste Codes:	D040, D043, F002	CAS Codes:	

Form: Very dilute aqueous waste containing more than 99% water

Reported: 42475.00 LB = 19262.41 KG				Managed Onsite: 0.00 KG
Shipments:				
02/05/2008	000125727VES	COD980591184	150.00 LB	Incineration - thermal destruction other than use as a fuel
04/17/2008	000168043VES	COD980591184	800.00 LB	Incineration - thermal destruction other than use as a fuel
06/10/2008	000168299VES	COD980591184	3200.00 LB	Incineration - thermal destruction other than use as a fuel
07/31/2008	000168359VES	COD980591184	167.00 LB	Incineration - thermal destruction other than use as a fuel
08/06/2008	000168305VES	COD980591184	843.00 LB	Incineration - thermal destruction other than use as a fuel
08/26/2008	000168344VES	COD980591184	550.00 LB	Incineration - thermal destruction other than use as a fuel
10/22/2008	000167800VES	COD980591184	4590.00 LB	Incineration - thermal destruction other than use as a fuel
11/05/2008	00016815VES	COD980591184	3400.00 LB	Incineration - thermal destruction other than use as a fuel
11/19/2008	000167835VES	COD980591184	6400.00 LB	Incineration - thermal destruction other than use as a fuel

Waste Stream:	Partially filled and empty aerosol cans	Source:	Painting and coating
Waste Codes:	D001, D003	CAS Codes:	
Form:	Paint, ink, lacquer, or varnish		

Reported: 162.00 LB = 73.47 KG				Managed Onsite: 0.00 KG
Shipments:				
03/13/2008	000127947VES	COD980591184	29.00 LB	Incineration - thermal destruction other than use as a fuel
04/17/2008	000168043VES	COD980591184	40.00 LB	Incineration - thermal destruction other than use as a fuel
06/10/2008	000168299VES	COD980591184	5.00 LB	Incineration - thermal destruction other than use as a fuel
09/24/2008	000167741VES	COD980591184	88.00 LB	Incineration - thermal destruction other than use as a fuel

Waste Stream:	Waste contaminated rags and debris, waste wax	Source:	Painting and coating
Waste Codes:	D001, F005	CAS Codes:	
Form:	Resins, tars, polymer or tarry sludge		

Reported: 6754.00 LB = 3062.94 KG				Managed Onsite: 0.00 KG
Shipments:				
02/05/2008	000125727VES	COD980591184	843.00 LB	Fuel blending prior to energy recovery at another site
04/17/2008	000168043VES	COD980591184	1200.00 LB	Fuel blending prior to energy recovery at another site
06/10/2008	000168299VES	COD980591184	900.00 LB	Fuel blending prior to energy recovery at another site
06/30/2008	000127653VES	COD980591184	436.00 LB	Fuel blending prior to energy recovery at another site
08/06/2008	000168305VES	COD980591184	900.00 LB	Fuel blending prior to energy recovery at another site

	08/26/2008	000168344VES	COD980591184	450.00 LB	Fuel blending prior to energy recovery at another site
	09/24/2008	000167741VES	COD980591184	525.00 LB	Fuel blending prior to energy recovery at another site
	10/22/2008	000167800VES	COD980591184	500.00 LB	Fuel blending prior to energy recovery at another site
	11/05/2008	000167815VES	COD980591184	200.00 LB	Fuel blending prior to energy recovery at another site
	11/19/2008	000167835VES	COD980591184	500.00 LB	Fuel blending prior to energy recovery at another site
Waste Stream:	Bead Blast Dust			Source:	Other production or service-related processes (specify in comments)
Waste Codes:	D006, D008			CAS Codes:	
Form:	Other inorganic solids (specify in comments)				
Reported:	40.00 LB = 18.14 KG			Managed Onsite:	0.00 KG
Shipments:	02/05/2008	000125726VES	ORD089452353	40.00 LB	Landfill or surface impoundment that will be closed as landfill
Waste Stream:	Positive Photoresist			Source:	Discarding off-specification or out-of-date chemicals or products
Waste Codes:	D001			CAS Codes:	
Form:	Other organic liquid (specify in comments)				
Reported:	50.00 LB = 22.68 KG			Managed Onsite:	0.00 KG
Shipments:	11/19/2008	000167835VES	COD980591184	50.00 LB	Fuel blending prior to energy recovery at another site
Waste Stream:	Partially empty propane cylinder			Source:	Discarding off-specification or out-of-date chemicals or products
Waste Codes:	D001, D003			CAS Codes:	
Form:	Compressed gases				
Reported:	3.00 LB = 1.36 KG			Managed Onsite:	0.00 KG
Shipments:	02/05/2008	000125727VES	COD980591184	2.00 LB	Incineration - thermal destruction other than use as a fuel
	06/30/2008	000127653VES	COD980591184	1.00 LB	Incineration - thermal destruction other than use as a fuel
	09/24/2008	000167741VES	COD980591184	2.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:	Chrome debris			Source:	Cleanup of spill residues (Not part of an ongoing remediation project)
Waste Codes:	D007			CAS Codes:	
Form:	Metal scale, filings and scrap (including metal drums)				
Reported:	125.00 LB = 56.69 KG			Managed Onsite:	0.00 KG
Shipments:	06/10/2008	000168298VES	ORD089452353	125.00 LB	Landfill or surface impoundment that will be closed as landfill
Waste Stream:	Acid debris			Source:	Cleanup of spill residues (Not part of an ongoing remediation project)
Waste Codes:	D002			CAS Codes:	
Form:	Contaminated debris: paper, rags, wood, empty containers, etc.				
Reported:	75.00 LB = 34.01 KG			0.00 KG	

Managed Onsite:					
Shipments:	02/05/2008	000125727VES	COD980591184	20.00 LB	Incineration - thermal destruction other than use as a fuel
	04/17/2008	000168043VES	COD980591184	5.00 LB	Incineration - thermal destruction other than use as a fuel
	08/26/2008	000168344VES	COD980591184	65.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:	Reacted TCS solids and contaminated debris			Source:	Process equipment change-out or discontinue use of equipment
Waste Codes:	D003			CAS Codes:	
Form:	Other inorganic solids (specify in comments)				
Reported:	60.00 LB = 27.21 KG			Managed Onsite:	0.00 KG
Shipments:	07/08/2008	000168381VES	COD980591184	60.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:	Investigation derived waste (PPE)			Source:	Remediation waste generated under state approved cleanup authority
Waste Codes:	F002			CAS Codes:	
Form:	Contaminated debris: paper, rags, wood, empty containers, etc.				
Reported:	1370.00 LB = 621.30 KG			Managed Onsite:	0.00 KG
Shipments:	02/05/2008	000125726VES	ORD089452353	10.00 LB	Landfill or surface impoundment that will be closed as landfill
	04/17/2008	000168044VES	ORD089452353	40.00 LB	Landfill or surface impoundment that will be closed as landfill
	06/10/2008	000168298VES	ORD089452353	200.00 LB	Landfill or surface impoundment that will be closed as landfill
	08/06/2008	000168306VES	ORD089452353	80.00 LB	Landfill or surface impoundment that will be closed as landfill
	08/26/2008	000168345VES	ORD089452353	20.00 LB	Landfill or surface impoundment that will be closed as landfill
	10/22/2008	000167801VES	ORD089452353	430.00 LB	Landfill or surface impoundment that will be closed as landfill
	11/19/2008	000167836VES	ORD089452353	100.00 LB	Landfill or surface impoundment that will be closed as landfill
Waste Stream:	Mixed facility lab waste			Source:	Laboratory analytical wastes (used chemicals)
Waste Codes:	D002, D006, D007, D009, D011			CAS Codes:	
Form:	Lab packs with no acute hazardous waste				
Reported:	35.00 LB = 15.87 KG			Managed Onsite:	0.00 KG
Shipments:	02/15/2008	000125725VES	AZ0000337360	15.00 LB	Metals recovery including retorting, smelting, chemical, etc.
	08/06/2008	000168307VES	AZ0000337360	20.00 LB	Metals recovery including retorting, smelting, chemical, etc.
Waste Stream:	Tritration Lab Waste - Labpack			Source:	Laboratory analytical wastes (used chemicals)
Waste Codes:	D001			CAS Codes:	
Form:	Lab packs with no acute hazardous waste				
Reported:	15.00 LB = 6.80 KG			Managed Onsite:	0.00 KG

Shipments:	03/13/2008 000127947VES COD980591184	15.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:	Lab pack from analytical lab clean-out	Source:	Laboratory analytical wastes (used chemicals)
Waste Codes:	D002, D023, D024, D025, U052, U067	CAS Codes:	
Form:	Lab packs with no acute hazardous waste		
Reported:	13.00 LB = 5.90 KG	Managed Onsite:	0.00 KG
Shipments:	03/13/2008 000127947VES COD980591184	13.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:	lab pack from analytical lab clean-out	Source:	Laboratory analytical wastes (used chemicals)
Waste Codes:	D001, U068, U080, U188, U209, U226	CAS Codes:	
Form:	Lab packs with no acute hazardous waste		
Reported:	58.00 LB = 26.30 KG	Managed Onsite:	0.00 KG
Shipments:	03/13/2008 000127947VES COD980591184	58.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:	lab pack from analytical lab clean-out	Source:	Laboratory analytical wastes (used chemicals)
Waste Codes:	D034, U088, U102, U123, U131	CAS Codes:	
Form:	Lab packs with no acute hazardous waste		
Reported:	20.00 LB = 9.07 KG	Managed Onsite:	0.00 KG
Shipments:	03/13/2008 000127947VES COD980591184	20.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:	lab pack from analytical lab clean-out	Source:	Laboratory analytical wastes (used chemicals)
Waste Codes:	D001, D002, D003, P005, U001, U041	CAS Codes:	
Form:	Lab packs with no acute hazardous waste		
Reported:	44.00 LB = 19.95 KG	Managed Onsite:	0.00 KG
Shipments:	03/13/2008 000127947VES COD980591184	44.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:	lab pack from analytical lab clean-out	Source:	Laboratory analytical wastes (used chemicals)
Waste Codes:	D001, D002, D019, D038, U031, U239	CAS Codes:	
Form:	Lab packs with no acute hazardous waste		
Reported:	23.00 LB = 10.43 KG	Managed Onsite:	0.00 KG
Shipments:	03/13/2008 000127947VES COD980591184	23.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:	lab pack from analytical lab clean-out	Source:	Laboratory analytical wastes (used chemicals)
Waste Codes:	D022, D036, U003, U055, U140, U169	CAS Codes:	
Form:	Lab packs with no acute hazardous waste		
Reported:	29.00 LB = 13.15 KG	Managed Onsite:	0.00 KG

Shipments:	03/13/2008	000127947VES	COD980591184	29.00 LB	Incineration - thermal destruction other than use as a fuel
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Waste Stream:	Lab pack	Source:	Laboratory analytical wastes (used chemicals)
Waste Codes:	D001, D005, D035, U159	CAS Codes:	
Form:	Lab packs with no acute hazardous waste		
Reported:	95.00 LB = 43.08 KG	Managed Onsite:	0.00 KG

Shipments:	06/30/2008	000127654VES	COD980591184	95.00 LB	Fuel blending prior to energy recovery at another site
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Waste Stream:	Lab pack	Source:	Laboratory analytical wastes (used chemicals)
Waste Codes:	D001, D002, D005	CAS Codes:	
Form:	Lab packs with no acute hazardous waste		
Reported:	42.00 LB = 19.05 KG	Managed Onsite:	0.00 KG

Shipments:	06/30/2008	000127654VES	COD980591184	42.00 LB	Incineration - thermal destruction other than use as a fuel
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Waste Stream:	Investigation derived waste (soil)	Source:	Remediation waste generated under state approved cleanup authority
Waste Codes:	F002	CAS Codes:	
Form:	Contaminated soil		
Reported:	11100.00 LB = 5033.85 KG	Managed Onsite:	0.00 KG

Shipments:	06/10/2008	000168298VES	ORD089452353	300.00 LB	Landfill or surface impoundment that will be closed as landfill
	10/22/2008	000167801VES	ORD089452353	300.00 LB	Landfill or surface impoundment that will be closed as landfill
	08/06/2008	000168306VES	ORD089452353	70.00 LB	Landfill or surface impoundment that will be closed as landfill

Waste Stream:	RCRA exempt waste water (CAD) comprised of nitrate and flouride ions	Source:	Etching
Waste Codes:	D002	CAS Codes:	14797-55-8
Form:	Acidic aqueous wastes less than 5% acid		
Reported:	75768000.00 GAL = 286740775.86 KG	Managed Onsite:	286740775.86 KG

Shipments:					
Waste Stream:	RCRA exempt wastewater (CCD) comprised of sodium hydroxide and potassium hy	Source:	Stripping and acid or caustic cleaning		
Waste Codes:	D002	CAS Codes:			
Form:	Caustic aqueous waste without cyanides				
Reported:	56675.00 GAL = 214484.13 KG	Managed Onsite:	214484.13 KG		

Shipments:					
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2007	LQG	20	263912.1106502	12/10/2007	02/21/2008
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Waste Stream:	Waste chromic acid	Source:	Etching
Waste Codes:	D002, D007	CAS Codes:	

Form: Spent concentrated acid					
Reported: 1982.00 LB = 898.84 KG				Managed Onsite: 0.00 KG	
Shipments:					
	01/09/2007	001686113	WAD991281767	446.00 LB	Chemical reduction with or without precipitation
	03/05/2007	001686345	WAD991281767	173.00 LB	Chemical reduction with or without precipitation
	06/01/2007	002967042	WAD991281767	233.00 LB	Chemical reduction with or without precipitation
	08/31/2007	002967417	WAD991281767	660.00 LB	Chemical reduction with or without precipitation
	11/16/2007	002965476	WAD991281767	384.00 LB	Chemical reduction with or without precipitation
Waste Stream: mykrolis inert II reactive micro matrix				Source: Other one-time or intermittent processes (specify in comments)	
Waste Codes: D003				CAS Codes:	
Form: Lab packs with no acute hazardous waste					
Reported: 15.00 LB = 6.80 KG				Managed Onsite: 0.00 KG	
Shipments:					
	01/05/2007	001686032	WAD991281767	15.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream: Site investigation derived (well) wastewater				Source: Investigation Derived Waste approved and overseen by DEQ or EPA	
Waste Codes: D040, D043, F002				CAS Codes:	
Form: Very dilute aqueous waste containing more than 99% water					
Reported: 2385.90 LB = 1082.01 KG				Managed Onsite: 0.00 KG	
Shipments:					
	10/16/2007	00127866	COD980591184	1835.90 LB	Solvents recovery
	12/19/2007	00127979	COD980591184	400.00 LB	Solvents recovery
Waste Stream: Partially filled and empty aerosol cans				Source: Painting and coating	
Waste Codes: D001, D003				CAS Codes:	
Form: Paint, ink, lacquer, or varnish					
Reported: 110.00 LB = 49.89 KG				Managed Onsite: 0.00 KG	
Shipments:					
	01/05/2007	001313358	AZD009015389	3.00 LB	Incineration - thermal destruction other than use as a fuel
	04/24/2007	001311069	AZD009015389	30.00 LB	Incineration - thermal destruction other than use as a fuel
	09/05/2007	00127714	COD980591184	80.00 LB	Fuel blending prior to energy recovery at another site
Waste Stream: Waste contaminated rags and debris, waste wax				Source: Painting and coating	
Waste Codes: D001, F005				CAS Codes:	
Form: Resins, tars, polymer or tarry sludge					
Reported: 6678.00 LB = 3028.47 KG				Managed Onsite: 0.00 KG	
Shipments:					
	09/05/2007	00127714	COD980591184	1850.00 LB	Incineration - thermal destruction other than use as a fuel
	10/16/2007	00127866	COD980591184	250.00 LB	Incineration - thermal destruction other than use as a fuel

12/19/2007	00127979	COD980591184	450.00 LB	Incineration - thermal destruction other than use as a fuel
01/05/2007	001313357	CAD009452657	300.00 LB	Fuel blending prior to energy recovery at another site
03/08/2007	001313441	CAD009452657	1577.00 LB	Fuel blending prior to energy recovery at another site
04/24/2007	001311068	CAD009452657	600.00 LB	Fuel blending prior to energy recovery at another site
05/11/2007	001311143	CAD009452657	449.00 LB	Fuel blending prior to energy recovery at another site
07/05/2007	001311263	CAD009452657	1352.00 LB	Fuel blending prior to energy recovery at another site

Waste Stream:	Mercury debris	Source:	Other production or service-related processes (specify in comments)		
Waste Codes:	D009	CAS Codes:			
Form:	Contaminated debris: paper, rags, wood, empty containers, etc.				
Reported:	27.00 LB = 12.24 KG			Managed Onsite:	0.00 KG
Shipments:	10/16/2007	00127868	AZ0000337360	10.00 LB	Incineration - thermal destruction other than use as a fuel
	04/24/2007	001311068	CAD009452657	15.00 LB	Incineration - thermal destruction other than use as a fuel
	08/01/2007	001311320	CAD009452657	2.00 LB	Incineration - thermal destruction other than use as a fuel

Waste Stream:	hydrogen peroxide debris	Source:	Cleaning out process equipment		
Waste Codes:	D001	CAS Codes:			
Form:	Other inorganic liquid (specify in comments)				
Reported:	10.00 LB = 4.54 KG		Managed Onsite:	0.00 KG	
Shipments:	10/16/2007	00127866	COD980591184	10.00 LB	Incineration - thermal destruction other than use as a fuel

Waste Stream:	Chrome debris	Source:	Etching		
Waste Codes:	D007	CAS Codes:			
Form:	Contaminated debris: paper, rags, wood, empty containers, etc.				
Reported:	70.00 LB = 31.75 KG		Managed Onsite:	0.00 KG	
Shipments:	04/24/2007	001311070	ORD089452353	60.00 LB	Landfill or surface impoundment that will be closed as landfill
	12/19/2007	00127980	ORD089452353	10.00 LB	Landfill or surface impoundment that will be closed as landfill

Waste Stream:	Investigation derived waste (PPE)	Source:	Investigation Derived Waste approved and overseen by DEQ or EPA		
Waste Codes:	F002	CAS Codes:			
Form:	Contaminated debris: paper, rags, wood, empty containers, etc.				
Reported:	570.00 LB = 258.50 KG		Managed Onsite:	0.00 KG	
Shipments:	01/05/2007	001313359	ORD089452353	10.00 LB	Landfill or surface impoundment that will be closed as landfill
	04/24/2007	001311070	ORD089452353	60.00 LB	Landfill or surface impoundment that will be closed as landfill

07/05/2007	001311262	ORD089452353	60.00 LB	Landfill or surface impoundment that will be closed as landfill
09/11/2007	001313467	ORD089452353	400.00 LB	Landfill or surface impoundment that will be closed as landfill
12/19/2007	00127980	ORD089452353	30.00 LB	Landfill or surface impoundment that will be closed as landfill
10/16/2007	00127867	ORD089452353	25.00 LB	Landfill or surface impoundment that will be closed as landfill

Waste Stream:	Broken mercury containing lamps	Source:	Other one-time or intermittent processes (specify in comments)	
Waste Codes:	D009	CAS Codes:		
Form:	Other inorganic solids (specify in comments)			
Reported:	15.00 LB = 6.80 KG		Managed Onsite:	0.00 KG
Shipments:	10/16/2007	00127867	ORD089452353	15.00 LB Landfill or surface impoundment that will be closed as landfill

Waste Stream:	Lab pack	Source:	Laboratory analytical wastes (used chemicals)		
Waste Codes:	D001, D002, D003, D005, D007, D011			CAS Codes:	
Form:	Lab packs with no acute hazardous waste				
Reported:	216.00 LB = 97.96 KG			Managed Onsite:	0.00 KG
Shipments:	10/04/2007	00127757	COD980591184	61.00 LB	Incineration - thermal destruction other than use as a fuel
	07/05/2007	001311269	CAD009452657	155.00 LB	Incineration - thermal destruction other than use as a fuel

Waste Stream:	Lab pack 2	Source:	Laboratory analytical wastes (used chemicals)	
Waste Codes:	D003, D004, D005, D006, P030, P105		CAS Codes:	
Form:	Lab packs with no acute hazardous waste			
Reported:	40.00 LB = 18.14 KG		Managed Onsite:	0.00 KG
Shipments:	10/04/2007	00127757	COD980591184	40.00 LB Incineration - thermal destruction other than use as a fuel

Waste Stream:	Lab pack 3	Source:	Laboratory analytical wastes (used chemicals)		
Waste Codes:	D001, U239		CAS Codes:		
Form:	Lab packs with no acute hazardous waste				
Reported:	20.00 LB = 9.07 KG		Managed Onsite:	0.00 KG	
Shipments:	10/04/2007	00127757	COD980591184	20.00 LB	Fuel blending prior to energy recovery at another site

Waste Stream:	Mixed facility lab waste	Source:	Laboratory analytical wastes (used chemicals)	
Waste Codes:	D002, D006, D007, D009, D011		CAS Codes:	
Form:	Lab packs with no acute hazardous waste			
Reported:	8.30 LB = 3.76 KG		Managed Onsite:	0.00 KG
Shipments:	05/11/2007	1311143	CAD009452657	8.30 LB Metals recovery including retorting, smelting, chemical, etc.

Waste Stream:	Acid debris			Source: Cleanup of spill residues (Not part of an ongoing remediation project)	
Waste Codes:	D002			CAS Codes:	
Form:	Contaminated debris: paper, rags, wood, empty containers, etc.				
Reported:	245.00 LB = 111.11 KG			Managed Onsite:	0.00 KG
Shipments:	03/08/2007	001313441	CAD009452657	200.00 LB	Incineration - thermal destruction other than use as a fuel
	08/01/2007	001311320	CAD009452657	25.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:	Geoprobe decon and sampling water			Source: Investigation Derived Waste approved and overseen by DEQ or EPA	
Waste Codes:	F002			CAS Codes:	
Form:	Very dilute aqueous waste containing more than 99% water				
Reported:	3129.50 LB = 1419.23 KG			Managed Onsite:	0.00 KG
Shipments:	01/05/2007	001313357	CAD009452657	584.00 LB	Solvents recovery
	03/08/2007	001313441	CAD009452657	918.00 LB	Solvents recovery
	04/24/2007	001311068	CAD009452657	459.00 LB	Solvents recovery
	07/05/2007	001311263	CAD009452657	918.00 LB	Solvents recovery
	08/01/2007	001311320	CAD009452657	834.50 LB	Solvents recovery
Waste Stream:	Caustic Debris			Source: Cleanup of spill residues (Not part of an ongoing remediation project)	
Waste Codes:	D002			CAS Codes:	
Form:	Other inorganic solids (specify in comments)				
Reported:	175.00 LB = 79.36 KG			Managed Onsite:	0.00 KG
Shipments:	10/16/2007	00127866	COD980591184	150.00 LB	Incineration - thermal destruction other than use as a fuel
	12/19/2007	00127979	COD980591184	25.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:	Investigation derived waste (soil)			Source: Investigation Derived Waste approved and overseen by DEQ or EPA	
Waste Codes:	D040, F002			CAS Codes:	
Form:	Other organic solids (specify in comments)				
Reported:	25.00 LB = 11.34 KG			Managed Onsite:	0.00 KG
Shipments:	10/16/2007	00127867	ORD089452353	25.00 LB	Landfill or surface impoundment that will be closed as landfill
Waste Stream:	RCRA exempt waste water (CAD) comprised of hydrofluoric acid, nitric acid			Source: Etching	
Waste Codes:	D002			CAS Codes:	
Form:	Acidic aqueous wastes less than 5% acid				
Reported:	69664000.00 GAL = 263640447.28 KG			Managed Onsite:	263640447.28 KG
Shipments:					
Waste Stream:				Source: Stripping and acid or caustic cleaning	

RCRA exempt wastewater (CCD)
comprised of sodium hydroxide and
potassium hy

Waste Codes:	D002	CAS Codes:	
Form:	Caustic aqueous waste without cyanides		
Reported:	69900.00 GAL = 264533.58 KG	Managed Onsite:	264533.58 KG
Shipments:			

2006	LQG	16	259522.4672865	12/15/2006	02/16/2007
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Waste Stream:	Waste chromic acid	Source:	Etching		
Waste Codes:	D002, D007	CAS Codes:			
Form:	Spent concentrated acid				
Reported:	3302.00 LB = 1497.46 KG	Managed Onsite:	0.00 KG		
Shipments:	02/20/2006	58355	WAD991281767	200.00 LB	Chemical reduction with or without precipitation
	05/12/2006	68080	WAD991281767	1980.00 LB	Chemical reduction with or without precipitation
	08/03/2006	80222	WAD991281767	198.00 LB	Chemical reduction with or without precipitation
	11/02/2006	1358475	WAD991281767	590.00 LB	Chemical reduction with or without precipitation

Waste Stream:	Mercury debris	Source:	Other production or service-related processes (specify in comments)		
Waste Codes:	D009	CAS Codes:			
Form:	Contaminated debris: paper, rags, wood, empty containers, etc.				
Reported:	61.00 LB = 27.66 KG		Managed Onsite:	0.00 KG	
Shipments:	01/24/2006	24542050	CAD009452657	15.00 LB	Incineration - thermal destruction other than use as a fuel
	03/07/2006	24542158	CAD009452657	50.00 LB	Incineration - thermal destruction other than use as a fuel
	05/25/2006	23888430	CAD009452657	1.00 LB	Incineration - thermal destruction other than use as a fuel
	09/07/2006	1313097	CAD009452657	10.00 LB	Incineration - thermal destruction other than use as a fuel

Waste Stream:	Waste contaminated rags and debris, waste wax			Source:	Painting and coating
Waste Codes:	D001, F005			CAS Codes:	
Form:	Resins, tars, polymer or tarry sludge				
Reported:	6998.00 LB = 3173.59 KG			Managed Onsite:	0.00 KG
Shipments:	01/24/2006	24542050	CAD009452657	1201.00 LB	Energy recovery or fuel blending
	03/07/2006	24542158	CAD009452657	818.00 LB	Energy recovery or fuel blending
	04/26/2006	24542350	CAD009452657	500.00 LB	Energy recovery or fuel blending
	05/25/2006	23888430	CAD009452657	1200.00 LB	Energy recovery or fuel blending
	07/11/2006	23888541	CAD009452657	665.00 LB	Energy recovery or fuel blending
	09/07/2006	1313097	CAD009452657	1575.00 LB	Energy recovery or fuel blending
	10/18/2006	1313228	CAD009452657	500.00 LB	Energy recovery or fuel blending
	11/21/2006	1313284	CAD009452657	675.00 LB	Energy recovery or fuel blending
	12/07/2006	1313309	CAD009452657	150.00 LB	Energy recovery or fuel blending

Waste Stream:	Lab pack			Source:	Laboratory analytical wastes (used chemicals)
Waste Codes:	D001, D005, D008, F002			CAS Codes:	
Form:	Lab packs with no acute hazardous waste				
Reported:	96.00 LB = 43.54 KG			Managed Onsite:	0.00 KG
Shipments:	04/24/2006	24542351	CAD009452657	45.00 LB	Energy recovery or fuel blending
	04/24/2006	24541351	CAD009452657	1.00 LB	Incineration - thermal destruction other than use as a fuel
	12/07/2006	1314657	CAD009452657	50.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:	Mercury switches			Source:	Process equipment change-out or discontinue use of equipment
Waste Codes:	D009			CAS Codes:	
Form:	Lab packs with no acute hazardous waste				
Reported:	12.00 LB = 5.44 KG			Managed Onsite:	0.00 KG
Shipments:	07/11/2006	23888541	CAD009452657	10.00 LB	Metals recovery including retorting, smelting, chemical, etc.
	01/24/2006	24542049	CAD009452657	2.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:	DI water with mercury			Source:	Laboratory analytical wastes (used chemicals)
Waste Codes:	D009			CAS Codes:	
Form:	Very dilute aqueous waste containing more than 99% water				
Reported:	30.00 LB = 13.61 KG			Managed Onsite:	0.00 KG
Shipments:	03/07/2006	24542158	CAD009452657	30.00 LB	Solvents recovery
Waste Stream:	Partially filled and empty aerosol cans			Source:	Painting and coating
Waste Codes:	D001, D003			CAS Codes:	
Form:	Paint, ink, lacquer, or varnish				
Reported:	103.00 LB = 46.71 KG			Managed Onsite:	0.00 KG
Shipments:	04/24/2006	04246	AZD009015389	25.00 LB	Energy recovery or fuel blending
	11/21/2006	1313285	AZD009015389	75.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:	Acid debris			Source:	Cleanup of spill residues (Not part of an ongoing remediation project)
Waste Codes:	D002			CAS Codes:	
Form:	Contaminated debris: paper, rags, wood, empty containers, etc.				
Reported:	190.00 LB = 86.17 KG			Managed Onsite:	0.00 KG
Shipments:	01/24/2006	24542050	CAD009452657	80.00 LB	Incineration - thermal destruction other than use as a fuel
	05/25/2006	23888430	CAD009452657	15.00 LB	Incineration - thermal destruction other than use as a fuel
	07/11/2006	23888541	CAD009452657	35.00 LB	Incineration - thermal destruction other than use as a fuel

	10/18/2006	1313228	CAD009452657	30.00 LB	Incineration - thermal destruction other than use as a fuel
	11/21/2006	1313284	CAD009452657	100.00 LB	Incineration - thermal destruction other than use as a fuel
	12/07/2006	1313309	CAD009452657	10.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:	Mixed facility lab waste			Source:	Discarding off-specification or out-of-date chemicals or products
Waste Codes:	D002, D006, D007, D009, D011			CAS Codes:	
Form:	Lab packs with no acute hazardous waste				
Reported:	29.00 LB = 13.15 KG			Managed Onsite:	0.00 KG
Shipments:					
	01/24/2006	24542050	CAD009452657	8.00 LB	Metals recovery including retorting, smelting, chemical, etc.
	07/11/2006	23888541	CAD009452657	13.00 LB	Metals recovery including retorting, smelting, chemical, etc.
	11/21/2006	1313284	CAD009452657	8.00 LB	Metals recovery including retorting, smelting, chemical, etc.
Waste Stream:	Investigation derived waste (soil)			Source:	Investigation Derived Waste approved and overseen by DEQ or EPA
Waste Codes:	F002			CAS Codes:	
Form:	Other organic solids (specify in comments)				
Reported:	40915.00 LB = 18554.95 KG			Managed Onsite:	0.00 KG
Shipments:					
	05/25/2006	5256	ORD089452353	2000.00 LB	Landfill or surface impoundment that will be closed as landfill
	08/08/2006	26360	ORD089452353	2250.00 LB	Landfill or surface impoundment that will be closed as landfill
	08/07/2006	26359	ORD089452353	31350.00 LB	Landfill or surface impoundment that will be closed as landfill
	10/18/2006	1313227	ORD089452353	3990.00 LB	Landfill or surface impoundment that will be closed as landfill
Waste Stream:	Chrome debris			Source:	Etching
Waste Codes:	D007			CAS Codes:	
Form:	Contaminated debris: paper, rags, wood, empty containers, etc.				
Reported:	300.00 LB = 136.05 KG			Managed Onsite:	0.00 KG
Shipments:					
	05/25/2006	5256	ORD089452353	200.00 LB	Landfill or surface impoundment that will be closed as landfill
	09/07/2006	1314591	ORD089452353	100.00 LB	Landfill or surface impoundment that will be closed as landfill
Waste Stream:	Investigation derived waste (PPE)			Source:	Investigation Derived Waste approved and overseen by DEQ or EPA
Waste Codes:	F002			CAS Codes:	
Form:	Contaminated debris: paper, rags, wood, empty containers, etc.				
Reported:	330.00 LB = 149.66 KG			Managed Onsite:	0.00 KG
Shipments:					
	03/16/2006	3166	ORD089452353	20.00 LB	Landfill or surface impoundment that will be closed as landfill
	05/25/2006	5256	ORD089452353	125.00 LB	Landfill or surface impoundment that will be closed as landfill

09/07/2006	1314591	ORD089452353	50.00 LB	Landfill or surface impoundment that will be closed as landfill
10/18/2006	1313227	ORD089452353	30.00 LB	Landfill or surface impoundment that will be closed as landfill
11/21/2006	1313283	ORD089452353	100.00 LB	Landfill or surface impoundment that will be closed as landfill

Waste Stream:	Geoprobe decon water			Source:	Investigation Derived Waste approved and overseen by DEQ or EPA
Waste Codes:	D018, D040, D043			CAS Codes:	
Form:	Very dilute aqueous waste containing more than 99% water				
Reported:	300.00 GAL = 1135.34 KG			Managed Onsite:	0.00 KG
Shipments:	07/07/2006	23888541	CAD009452657	200.00 GAL	Solvents recovery
	10/18/2006	1313228	CAD009452657	100.00 GAL	Solvents recovery

Waste Stream:	Investigation derived waste (water w/ benzene)			Source:	Investigation Derived Waste approved and overseen by DEQ or EPA
Waste Codes:	F002			CAS Codes:	
Form:	Very dilute aqueous waste containing more than 99% water				
Reported:	4968.00 LB = 2252.99 KG			Managed Onsite:	0.00 KG
Shipments:	03/07/2006	24542158	CAD009452657	417.00 LB	Solvents recovery
	05/25/2006	23888430	CAD009452657	2600.00 LB	Solvents recovery
	09/07/2006	1313097	CAD009452657	1377.00 LB	Solvents recovery

Waste Stream:	RCRA exempt waste water (CAD) comprised of hydrofluoric acid, nitric acid	Source:	Etching
Waste Codes:	D002	CAS Codes:	
Form:	Acidic aqueous wastes less than 5% acid		
Reported:	68500000.00 GAL = 259235338.75 KG	Managed Onsite:	259235338.75 KG
Shipments:			

Waste Stream:	RCRA exempt wastewater (CCD) comprised of sodium hydroxide and potassium hy	Source:	Stripping and acid or caustic cleaning
Waste Codes:	D002	CAS Codes:	
Form:	Caustic aqueous waste without cyanides		
Reported:	68700.00 GAL = 259992.23 KG	Managed Onsite:	259992.23 KG
Shipments:			

2005	LQG	19	261076.569270875	12/21/2005	02/28/2006
Waste Stream:	Waste chromic acid			Source: Etching	
Waste Codes:	D002, D007			CAS Codes:	
Form: Spent concentrated acid					
Reported: 4728.00 LB = 2144.15 KG			Managed Onsite: 0.00 KG		
Shipments:	01/14/2005	24801	WAD991281767	987.00 LB	Landfill or surface impoundment that will be closed as landfill
	04/13/2005	30844	WAD991281767		

				1025.00 LB	Landfill or surface impoundment that will be closed as landfill
06/30/2005	37076	WAD991281767		950.00 LB	Landfill or surface impoundment that will be closed as landfill
08/25/2005	42222	WAD991281767		1825.00 LB	Landfill or surface impoundment that will be closed as landfill
11/18/2005	50059	WAD991281767		640.00 LB	Landfill or surface impoundment that will be closed as landfill

Waste Stream:	Waste contaminated rags and debris, waste wax			Source:	Painting and coating
Waste Codes:	D001, F005			CAS Codes:	
Form:	Resins, tars, polymer or tarry sludge				
Reported:	6401.00 LB = 2902.85 KG			Managed Onsite:	0.00 KG
Shipments:	07/01/2005	37784	MOD981127319	377.00 LB	Energy recovery or fuel blending
	08/24/2005	37893	MOD981127319	991.00 LB	Energy recovery or fuel blending
	09/22/2005	37978	MOD981127319	411.00 LB	Energy recovery or fuel blending
	02/14/2005	19411	MOD054018288	1126.00 LB	Energy recovery or fuel blending
	04/15/2005	19599	MOD054018288	1102.00 LB	Energy recovery or fuel blending
	06/06/2005	37715	MOD054018288	950.00 LB	Energy recovery or fuel blending
	11/21/2005	08242	MOD054018288	1193.00 LB	Energy recovery or fuel blending

Waste Stream:	Mercury Debris			Source:	Other production or service-related processes (specify in comments)
Waste Codes:	D009			CAS Codes:	
Form:	Contaminated debris: paper, rags, wood, empty containers, etc.				
Reported:	90.00 LB = 40.81 KG			Managed Onsite:	0.00 KG
Shipments:	06/06/2005	37715	CAD009452657	25.00 LB	Incineration - thermal destruction other than use as a fuel
	07/01/2005	37784	CAD009452657	50.00 LB	Incineration - thermal destruction other than use as a fuel

Waste Stream:	Partially filled and empty aerosol cans			Source:	Painting and coating
Waste Codes:	D001, D003			CAS Codes:	
Form:	Other organic liquid (specify in comments)				
Reported:	120.00 LB = 54.42 KG			Managed Onsite:	0.00 KG
Shipments:	04/15/2005	0415B	AZD009015389	10.00 LB	Energy recovery or fuel blending
	07/01/2005	37784	AZD009015389	45.00 LB	Energy recovery or fuel blending
	11/22/2005	11225	AZD009015389	65.00 LB	Energy recovery or fuel blending

Waste Stream:	Acid debris			Source:	Cleanup of spill residues (Not part of an ongoing remediation project)
Waste Codes:	D002			CAS Codes:	
Form:	Contaminated debris: paper, rags, wood, empty containers, etc.				
Reported:	300.00 LB = 136.05 KG			Managed Onsite:	0.00 KG
Shipments:	02/14/2005	19411	ARD069748192	5.00 LB	Incineration - thermal destruction other than use as a fuel
	04/15/2005	19599	ARD069748192	80.00 LB	Incineration - thermal destruction other than use as a fuel
	07/01/2005	37784	ARD069748192		

				30.00 LB	Incineration - thermal destruction other than use as a fuel
	09/22/2005	37978	ARD069748192	75.00 LB	Incineration - thermal destruction other than use as a fuel
	06/06/2005	37715	CAD009452657	30.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:	Broken thermometer				Source: Other one-time or intermittent processes (specify in comments)
Waste Codes:	D009				CAS Codes:
Form:	Lab packs containing acute hazardous waste				
Reported:	2.00 LB = 0.91 KG				Managed Onsite: 0.00 KG
Shipments:	11/22/2005	08239	CAD009452657	2.00 LB	Metals recovery including retorting, smelting, chemical, etc.
Waste Stream:	RCRA exempt waste water (CAD) comprised of hydrofluoric acid, nitric acid				Source: Etching
Waste Codes:	D002				CAS Codes:
Form:	Acidic aqueous wastes less than 5% acid				
Reported:	68900000.00 GAL = 260749121.75 KG				Managed Onsite: 260749121.75 KG
Shipments:					
Waste Stream:	RCRA exempt wastewater (CCD) comprised of sodium hydroxide and potassium hy				Source: Stripping and acid or caustic cleaning
Waste Codes:	D002				CAS Codes:
Form:	Caustic aqueous waste without cyanides				
Reported:	83700.00 GAL = 316759.09 KG				Managed Onsite: 316759.09 KG
Shipments:					
Waste Stream:	chop saw duct sludge				Source: Cleaning out process equipment
Waste Codes:	D004, D005, D007, D008, D010				CAS Codes:
Form:	Metal scale, filings and scrap (including metal drums)				
Reported:	80.00 LB = 36.28 KG				Managed Onsite: 0.00 KG
Shipments:	11/22/2005	08239	CAD009452657	80.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:	DI water with mercury				Source: Laboratory analytical wastes (used chemicals)
Waste Codes:	D009				CAS Codes:
Form:	Very dilute aqueous waste containing more than 99% water				
Reported:	10.00 GAL = 37.84 KG				Managed Onsite: 0.00 KG
Shipments:	07/01/2005	37784	CAD009452657	10.00 GAL	Solvents recovery
Waste Stream:	Lab waste				Source: Laboratory analytical wastes (used chemicals)
Waste Codes:	D002, D006, D007, D009, D011				CAS Codes:
Form:	Lab packs with no acute hazardous waste				

Reported: 28.00 LB = 12.70 KG				Managed Onsite: 0.00 KG	
Shipments:	04/15/2005	19599	CAD009452657	20.00 LB	Metals recovery including retorting, smelting, chemical, etc.
	07/01/2005	37784	CAD009452657	8.00 LB	Metals recovery including retorting, smelting, chemical, etc.
Waste Stream:	labpack of excess mineral spirits			Source:	Discarding off-specification or out-of-date chemicals or products
Waste Codes:	D001			CAS Codes:	
Form:	Paint, ink, lacquer, or varnish				
Reported: 185.00 LB = 83.90 KG				Managed Onsite: 0.00 KG	
Shipments:	06/06/2005	37714	CAD009452657	185.00 LB	Energy recovery or fuel blending
Waste Stream:	Trash and PPE from site investigation			Source:	Investigation Derived Waste approved and overseen by DEQ or EPA
Waste Codes:	D018, D040			CAS Codes:	
Form:	Contaminated debris: paper, rags, wood, empty containers, etc.				
Reported: 260.00 LB = 117.91 KG				Managed Onsite: 0.00 KG	
Shipments:	06/02/2005	37708	ARD069748192	200.00 LB	Energy recovery or fuel blending
	08/24/2005	37893	ARD069748192	60.00 LB	Energy recovery or fuel blending
Waste Stream:	Investigation derived waste (water w/ benzene)			Source:	Investigation Derived Waste approved and overseen by DEQ or EPA
Waste Codes:	F002			CAS Codes:	
Form:	Very dilute aqueous waste containing more than 99% water				
Reported: 2580.00 LB = 1170.03 KG				Managed Onsite: 0.00 KG	
Shipments:	04/15/2005	19599	CAD009452657	150.00 LB	Solvents recovery
	06/06/2005	37715	CAD009452657	2420.00 LB	Solvents recovery
Waste Stream:	Investigation derived waste (PPE)			Source:	Investigation Derived Waste approved and overseen by DEQ or EPA
Waste Codes:	F002			CAS Codes:	
Form:	Contaminated debris: paper, rags, wood, empty containers, etc.				
Reported: 304.00 LB = 137.86 KG				Managed Onsite: 0.00 KG	
Shipments:	02/14/2005	02145	ORD089452353	4.00 LB	Landfill or surface impoundment that will be closed as landfill
	04/15/2005	04155	ORD089452353	50.00 LB	Landfill or surface impoundment that will be closed as landfill
	07/01/2005	07015	ORD089452353	180.00 LB	Landfill or surface impoundment that will be closed as landfill
	11/21/2005	11215	ORD089452353	50.00 LB	Landfill or surface impoundment that will be closed as landfill
Waste Stream:	chrome debris			Source:	Etching
Waste Codes:	D007			CAS Codes:	
Form:	Very dilute aqueous waste containing more than 99% water				

Reported: 110.00 LB = 49.89 KG

Managed Onsite: 0.00 KG

Shipments:	09/22/2005	0922B	ORD089452353	60.00 LB	Stabilization or chemical fixation prior to disposal at another site.
	11/21/2005	11215	ORD089452353	50.00 LB	Stabilization or chemical fixation prior to disposal at another site.

Waste Stream: Investigation derived waste (soil)

Source: Investigation Derived Waste approved and overseen by DEQ or EPA

Waste Codes: F002

CAS Codes:

Form: Other organic solids (specify in comments)

Reported: 450.00 LB = 204.08 KG

Managed Onsite: 0.00 KG

Shipments:	11/21/2005	11215	ORD089452353	450.00 LB	Landfill or surface impoundment that will be closed as landfill

Waste Stream: labpack mercury switches

Source: Process equipment change-out or discontinue use of equipment

Waste Codes: D009

CAS Codes:

Form: Lab packs with no acute hazardous waste

Reported: 3.00 LB = 1.36 KG

Managed Onsite: 0.00 KG

Shipments:	08/24/2005	37895	CAD009452657	1.00 LB	Metals recovery including retorting, smelting, chemical, etc.

Waste Stream: geoprobe decon water

Source: Investigation Derived Waste approved and overseen by DEQ or EPA

Waste Codes: D018, D040, D043

CAS Codes:

Form: Very dilute aqueous waste containing more than 99% water

Reported: 940.00 GAL = 3557.39 KG

Managed Onsite: 0.00 KG

Shipments:	06/02/2005	37708	CAD009452657	605.00 GAL	Solvents recovery
	06/06/2005	37715	CAD009452657	110.00 GAL	Solvents recovery
	08/24/2005	37893	CAD009452657	75.00 GAL	Solvents recovery
	11/21/2005	08242	CAD009452657	150.00 GAL	Solvents recovery



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Waste Stream: Waste chromic acid

Source: Etching

Waste Codes: D002, D007

CAS Codes: HF

Form: Spent concentrated acid

Reported: 5292.00 LB = 2399.92 KG

Managed Onsite: 0.00 KG

Shipments:	02/10/2004	02885	WAD991281767	2000.00 LB	Landfill or surface impoundment that will be closed as landfill
	05/05/2004	07052	WAD991281767	1590.00 LB	Landfill or surface impoundment that will be closed as landfill
	07/28/2004	13905	WAD991281767	450.00 LB	Landfill or surface impoundment that will be closed as landfill
	10/18/2004	19514	WAD991281767	1531.00 LB	Landfill or surface impoundment that will be closed as landfill

Waste Stream: Waste contaminated rags and debris, waste wax

Source: Painting and coating

D001, F005

Waste Codes:				CAS Codes:	
Form: Resins, tars, polymer or tarry sludge					
Reported: 6972.00 LB = 3161.80 KG				Managed Onsite: 0.00 KG	
Shipments:	02/05/2004	21887	CAD009452657	700.00 LB	Energy recovery or fuel blending
	03/18/2004	36018	CAD009452657	762.00 LB	Energy recovery or fuel blending
	04/29/2004	36148	CAD009452657	1454.00 LB	Energy recovery or fuel blending
	05/05/2004	36172	CAD009452657	222.00 LB	Energy recovery or fuel blending
	06/09/2004	36252	CAD009452657	656.00 LB	Energy recovery or fuel blending
	07/29/2004	36385	CAD009452657	1231.00 LB	Energy recovery or fuel blending
	09/20/2004	80903	CAD009452657	812.00 LB	Energy recovery or fuel blending
	10/25/2004	80961	CAD009452657	870.00 LB	Energy recovery or fuel blending
	12/12/2004	81068	CAD009452657	546.00 LB	Energy recovery or fuel blending
<hr/>					
Waste Stream: Mercury Debris				Source: Other production or service-related processes (specify in comments)	
Waste Codes: D009				CAS Codes:	
Form: Contaminated debris: paper, rags, wood, empty containers, etc.					
Reported: 5.00 LB = 2.27 KG				Managed Onsite: 0.00 KG	
Shipments:	02/05/2004	21887	CAD009452657	15.00 LB	Incineration - thermal destruction other than use as a fuel
	06/09/2004	36252	CAD009452657	5.00 LB	Incineration - thermal destruction other than use as a fuel
<hr/>					
Waste Stream: Partially filled and empty aerosol cans				Source: Painting and coating	
Waste Codes: D001, D003				CAS Codes:	
Form: Other organic liquid (specify in comments)					
Reported: 105.00 LB = 47.62 KG				Managed Onsite: 0.00 KG	
Shipments:	02/05/2004	01274	AZD009015389	25.00 LB	Energy recovery or fuel blending
	05/05/2004	4504	AZD009015389	50.00 LB	Energy recovery or fuel blending
	12/13/2004	12134	AZD009015389	45.00 LB	Energy recovery or fuel blending
<hr/>					
Waste Stream: Acid debris				Source: Cleanup of spill residues (Not part of an ongoing remediation project)	
Waste Codes: D002				CAS Codes: HF, HCL	
Form: Contaminated debris: paper, rags, wood, empty containers, etc.					
Reported: 555.00 LB = 251.69 KG				Managed Onsite: 0.00 KG	
Shipments:	03/18/2004	36018	CAD009452657	30.00 LB	Incineration - thermal destruction other than use as a fuel
	06/09/2004	36252	CAD009452657	450.00 LB	Incineration - thermal destruction other than use as a fuel
	09/20/2004	80903	CAD009452657	50.00 LB	Incineration - thermal destruction other than use as a fuel
	12/12/2004	81068	CAD009452657	25.00 LB	Incineration - thermal destruction other than use as a fuel
<hr/>					
Waste Stream: RCRA exempt waste water (CAD) comprised of hydrofluoric acid, nitric acid				Source: Etching	
Waste Codes: D002				CAS Codes: 14797-55-8, HF	

Form: Acidic aqueous wastes less than 5% acid

Reported: 72600000.00 GAL = 274751614.50 KG

Managed Onsite: 274751614.50 KG

Shipments:

Waste Stream: RCRA exempt wastewater (CCD) comprised of sodium hydroxide and potassium hy

Source: Stripping and acid or caustic cleaning

Waste Codes: D002

CAS Codes:

Form: Caustic aqueous waste without cyanides

Reported: 77250.00 GAL = 292349.34 KG

Managed Onsite: 292349.34 KG

Shipments:

Waste Stream: Debris from HF tank demolition

Source: Process equipment change-out or discontinue use of equipment

Waste Codes: U134

CAS Codes: HF

Form: Contaminated debris: paper, rags, wood, empty containers, etc.

Reported: 2000.00 LB = 907.00 KG

Managed Onsite: 0.00 KG

Shipments: 10/21/2004 24445 ORD089452353 2000.00 LB Landfill or surface impoundment that will be closed as landfill

Waste Stream: Investigation derived waste (PPE)

Source: Investigation Derived Waste approved and overseen by DEQ or EPA

Waste Codes: F002

CAS Codes:

Form: Contaminated debris: paper, rags, wood, empty containers, etc.

Reported: 1250.00 LB = 566.88 KG

Managed Onsite: 0.00 KG

Shipments: 11/01/2004 11104 ORD089452353 1100.00 LB Landfill or surface impoundment that will be closed as landfill
12/13/2004 12135 ORD089452353 150.00 LB Landfill or surface impoundment that will be closed as landfill

Waste Stream: Broken thermometer

Source: Other one-time or intermittent processes (specify in comments)

Waste Codes: D009

CAS Codes:

Form: Lab packs containing acute hazardous waste

Reported: 1.00 LB = 0.45 KG

Managed Onsite: 0.00 KG

Shipments: 12/13/2004 81087 CAD009452657 1.00 LB Metals recovery including retorting, smelting, chemical, etc.

Waste Stream: Excess oil-based paint

Source: Discarding off-specification or out-of-date chemicals or products

Waste Codes: D001, D002, D035

CAS Codes:

Form: Paint, ink, lacquer, or varnish

Reported: 50.00 LB = 22.68 KG

Managed Onsite: 0.00 KG

Shipments: 02/05/2004 01273 AZD009015389 150.00 LB Fuel blending prior to energy recovery at another site

Waste Stream: Excess oil-based paint

Source: Discarding off-specification or out-of-date chemicals or products

D001, D005, D035

Waste Codes:	CAS Codes:
Form: Paint, ink, lacquer, or varnish	
Reported: 500.00 LB = 226.75 KG	Managed Onsite: 0.00 KG
Shipments: 04/29/2004 36148 CAD009452657 500.00 LB Energy recovery or fuel blending	
Waste Stream: labpack of excess oil-based paints	Source: Discarding off-specification or out-of-date chemicals or products
Waste Codes: D001	CAS Codes:
Form: Paint, ink, lacquer, or varnish	
Reported: 198.00 LB = 89.79 KG	Managed Onsite: 0.00 KG
Shipments: 09/20/2004 80906 CAD009452657 8.00 LB Energy recovery or fuel blending	
02/05/2004 01273 AZD009015389 190.00 LB Fuel blending prior to energy recovery at another site	
Waste Stream: Sodium hydroxide, solid	Source: Cleaning out process equipment
Waste Codes: D003	CAS Codes:
Form: Other inorganic solids (specify in comments)	
Reported: 350.00 LB = 158.72 KG	Managed Onsite: 0.00 KG
Shipments: 06/09/2004 36252 CAD009452657 350.00 LB Incineration - thermal destruction other than use as a fuel	
Waste Stream: Trash and PPE from site investigation	Source: Investigation Derived Waste approved and overseen by DEQ or EPA
Waste Codes: D018, D040	CAS Codes:
Form: Contaminated debris: paper, rags, wood, empty containers, etc.	
Reported: 100.00 LB = 45.35 KG	Managed Onsite: 0.00 KG
Shipments: 02/05/2004 21887 CAD009452657 100.00 LB Energy recovery or fuel blending	
Waste Stream: DI water with mercury	Source: Laboratory analytical wastes (used chemicals)
Waste Codes: D009	CAS Codes:
Form: Very dilute aqueous waste containing more than 99% water	
Reported: 6.00 GAL = 22.71 KG	Managed Onsite: 0.00 KG
Shipments: 07/29/2004 36385 CAD009452657 6.00 GAL Solvents recovery	
Waste Stream: Labpack of waste corrosive liquid	Source: Laboratory analytical wastes (used chemicals)
Waste Codes: D002	CAS Codes:
Form: Lab packs with no acute hazardous waste	
Reported: 10.00 LB = 4.54 KG	Managed Onsite: 0.00 KG
Shipments: 12/13/2004 81087 CAD009452657 10.00 LB Incineration - thermal destruction other than use as a fuel	
Waste Stream: Labpack of difluoroethane vessel	Source: Other one-time or intermittent processes (specify in comments)
D001	

Waste Codes:		CAS Codes:	
Form:	Lab packs with no acute hazardous waste		
Reported:	5.00 LB = 2.27 KG	Managed Onsite:	0.00 KG
Shipments:	02/05/2004 01273 AZD009015389 5.00 LB	Incineration - thermal destruction other than use as a fuel	
Waste Stream:	Labpack of excess hydrochloric acid	Source:	Discarding off-specification or out-of-date chemicals or products
Waste Codes:	D002	CAS Codes:	
Form:	Lab packs with no acute hazardous waste		
Reported:	50.00 LB = 22.68 KG	Managed Onsite:	0.00 KG
Shipments:	02/05/2004 01273 AZD009015389 50.00 LB	Incineration - thermal destruction other than use as a fuel	
Waste Stream:	Labpack of waste oxidizing solid, corrosive	Source:	Laboratory analytical wastes (used chemicals)
Waste Codes:	D002	CAS Codes:	
Form:	Lab packs with no acute hazardous waste		
Reported:	8.00 LB = 3.63 KG	Managed Onsite:	0.00 KG
Shipments:	05/05/2004 36044 CAD009452657 8.00 LB	Incineration - thermal destruction other than use as a fuel	
Waste Stream:	Labpack of waste methyl ethyl ketone peroxide	Source:	Discarding off-specification or out-of-date chemicals or products
Waste Codes:	D001	CAS Codes:	
Form:	Lab packs with no acute hazardous waste		
Reported:	65.00 LB = 29.48 KG	Managed Onsite:	0.00 KG
Shipments:	05/05/2004 36044 CAD009452657 65.00 LB	Incineration - thermal destruction other than use as a fuel	
Waste Stream:	labpack of excess diisopropylamine	Source:	Discarding off-specification or out-of-date chemicals or products
Waste Codes:	D001	CAS Codes:	
Form:	Lab packs with no acute hazardous waste		
Reported:	5.00 LB = 2.27 KG	Managed Onsite:	0.00 KG
Shipments:	07/29/2004 36386 CAD009452657 5.00 LB	Incineration - thermal destruction other than use as a fuel	
Waste Stream:	Labpack of empty propane cylinders	Source:	Other one-time or intermittent processes (specify in comments)
Waste Codes:	D001	CAS Codes:	
Form:	Lab packs with no acute hazardous waste		
Reported:	4.00 LB = 1.81 KG	Managed Onsite:	0.00 KG
Shipments:	12/13/2004 12134 CAD009452657 4.00 LB	Incineration - thermal destruction other than use as a fuel	
Waste Stream:	Labpack of lab waste	Source:	Laboratory analytical wastes (used chemicals)

Waste Codes:	D001, D022, F003				CAS Codes:	
Form:	Lab packs with no acute hazardous waste					
Reported:	4.00 LB = 1.81 KG				Managed Onsite:	0.00 KG
Shipments:	12/13/2004	81087	CAD009452657	4.00 LB	Incineration - thermal destruction other than use as a fuel	
Waste Stream:	Labpack of lab waste				Source:	Laboratory analytical wastes (used chemicals)
Waste Codes:	D002, D007				CAS Codes:	
Form:	Lab packs with no acute hazardous waste					
Reported:	4.00 LB = 1.81 KG				Managed Onsite:	0.00 KG
Shipments:	12/13/2004	81087	CAD009452657	4.00 LB	Incineration - thermal destruction other than use as a fuel	
Waste Stream:	Investigation derived waste (soil w/ benzene)				Source:	Investigation Derived Waste approved and overseen by DEQ or EPA
Waste Codes:	D040, F002				CAS Codes:	
Form:	Contaminated soil					
Reported:	600.00 LB = 272.10 KG				Managed Onsite:	0.00 KG
Shipments:	11/01/2004	80973	CAD009452657	600.00 LB	Incineration - thermal destruction other than use as a fuel	
Waste Stream:	Investigation derived waste (water w/ benzene)				Source:	Investigation Derived Waste approved and overseen by DEQ or EPA
Waste Codes:	D018, F002				CAS Codes:	
Form:	Very dilute aqueous waste containing more than 99% water					
Reported:	1010.00 GAL = 3822.30 KG				Managed Onsite:	0.00 KG
Shipments:	09/20/2004	80903	CAD009452657	75.00 GAL	Solvents recovery	
	10/21/2004	80955	CAD009452657	385.00 GAL	Solvents recovery	
	11/01/2004	80973	CAD009452657	495.00 GAL	Solvents recovery	
	12/12/2004	81068	CAD009452657	55.00 GAL	Solvents recovery	
Waste Stream:	Investigation derived waste (water w/ benzene and trichloroethene)				Source:	Investigation Derived Waste approved and overseen by DEQ or EPA
Waste Codes:	D018, D040, F002				CAS Codes:	
Form:	Very dilute aqueous waste containing more than 99% water					
Reported:	90.00 GAL = 340.60 KG				Managed Onsite:	0.00 KG
Shipments:	03/18/2004	36018	CAD009452657	55.00 GAL	Solvents recovery	
	06/09/2004	36252	CAD009452657	35.00 GAL	Solvents recovery	
Waste Stream:	Investigation derived waste (water w/ trichloroethene)				Source:	Investigation Derived Waste approved and overseen by DEQ or EPA
Waste Codes:	F002				CAS Codes:	
Form:	Very dilute aqueous waste containing more than 99% water					
Reported:	440.00 GAL = 1665.16 KG				Managed Onsite:	0.00 KG

Managed Onsite:					
Shipments:	03/18/2004	36018	CAD009452657	220.00 GAL	Solvents recovery
	06/09/2004	36252	CAD009452657	220.00 GAL	Solvents recovery
Waste Stream:	Investigation derived waste (water w/ trichloroethene and vinyl chloride)			Source:	Investigation Derived Waste approved and overseen by DEQ or EPA
Waste Codes:	D040, D043, F002			CAS Codes:	
Form:	Very dilute aqueous waste containing more than 99% water				
Reported:	140.00 GAL = 529.82 KG			Managed Onsite:	0.00 KG
Shipments:	03/18/2004	36018	CAD009452657	85.00 GAL	Solvents recovery
	06/09/2004	36252	CAD009452657	55.00 GAL	Solvents recovery
Waste Stream:	Lab waste			Source:	Laboratory analytical wastes (used chemicals)
Waste Codes:	D002, D006, D007, D009, D011			CAS Codes:	
Form:	Lab packs with no acute hazardous waste				
Reported:	2.00 GAL = 7.57 KG			Managed Onsite:	0.00 KG
Shipments:	04/29/2004	49544	CAD009452657	2.00 GAL	Metals recovery including retorting, smelting, chemical, etc.
Waste Stream:	Investigation derived waste groundwater			Source:	Investigation Derived Waste approved and overseen by DEQ or EPA
Waste Codes:	F002			CAS Codes:	
Form:	Very dilute aqueous waste containing more than 99% water				
Reported:	39000.00 GAL = 147593.84 KG			Managed Onsite:	147593.84 KG
Shipments:					
2003	LQG	23	286141.819340325	12/24/2003	04/01/2004
Waste Stream:	Chromic Acid etch			Source:	Etching
Waste Codes:	D002, D007			CAS Codes:	7664-39-3
Form:	Spent concentrated acid				
Reported:	10170.00 LB = 4612.10 KG			Managed Onsite:	0.00 KG
Shipments:	02/20/2003	83894	WAD991281767	1900.00 LB	Other chemical precipitation with or without pre-treatment
	05/08/2003	87824	WAD991281767	2000.00 LB	Other chemical precipitation with or without pre-treatment
	06/26/2003	90418	WAD991281767	1380.00 LB	Other chemical precipitation with or without pre-treatment
	08/28/2003	93774	WAD991281767	1850.00 LB	Other chemical precipitation with or without pre-treatment
	11/20/2003	98136	WAD991281767	1950.00 LB	Other chemical precipitation with or without pre-treatment
Waste Stream:	RCRA exempt waste water (CAD) comprised of hydrofluoric acid, hydrochloric			Source:	Etching
Waste Codes:	D002			CAS Codes:	7664-39-3, 7697-37-2, 7647-01-0
Form:	Acidic aqueous wastes less than 5% acid				

Reported: 74300000.00 GAL = 281185192.25 KG				Managed Onsite: 281185192.25 KG	
Shipments:					
Waste Stream:	Mercury Debris			Source:	Other production or service-related processes (specify in comments)
Waste Codes:	D009			CAS Codes:	
Form:	Contaminated debris: paper, rags, wood, empty containers, etc.				
Reported:	28.00 LB = 12.70 KG			Managed Onsite:	0.00 KG
Shipments:	06/26/2003	27226	CAD009452657	10.00 LB	Incineration - thermal destruction other than use as a fuel
	10/06/2003	27511	CAD009452657	3.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:	Waste contaminated rags and debris, waste wax			Source:	Painting and coating
Waste Codes:	D001, F005			CAS Codes:	
Form:	Resins, tars, polymer or tarry sludge				
Reported:	4982.00 LB = 2259.34 KG			Managed Onsite:	0.00 KG
Shipments:	02/06/2003	39066	CAD009452657	380.00 LB	Incineration - thermal destruction other than use as a fuel
	04/02/2003	19748	CAD009452657	548.00 LB	Incineration - thermal destruction other than use as a fuel
	05/20/2003	19902	CAD009452657	676.00 LB	Incineration - thermal destruction other than use as a fuel
	08/13/2003	27409	CAD009452657	757.00 LB	Incineration - thermal destruction other than use as a fuel
	10/06/2003	27511	CAD009452657	789.00 LB	Incineration - thermal destruction other than use as a fuel
	06/26/2003	27226	CAD009452657	354.00 LB	Incineration - thermal destruction other than use as a fuel
	12/01/2003	21779	CAD009452657	862.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:	Partial filled and empty aerosol cans			Source:	Painting and coating
Waste Codes:	D001, D003			CAS Codes:	
Form:	Other organic liquid (specify in comments)				
Reported:	135.00 LB = 61.22 KG			Managed Onsite:	0.00 KG
Shipments:	02/06/2003	01152	AZD009015389	10.00 LB	Energy recovery or fuel blending
	05/20/2003	01177	AZD009015389	10.00 LB	Energy recovery or fuel blending
	08/13/2003	01216	AZD009015389	75.00 LB	Energy recovery or fuel blending
	12/01/2003	01255	AZD009015389	25.00 LB	Energy recovery or fuel blending
Waste Stream:	Lab pack paint storage cabinets			Source:	Discarding off-specification or out-of-date chemicals or products
Waste Codes:	D001			CAS Codes:	
Form:	Lab packs with no acute hazardous waste				
Reported:	290.00 LB = 131.52 KG			Managed Onsite:	0.00 KG
Shipments:	01/13/2003	38976	CAD009452657	40.00 LB	Incineration - thermal destruction other than use as a fuel

06/26/2003 27222 CAD009452657 150.00 LB		Incineration - thermal destruction other than use as a fuel
Waste Stream:	RCRA exempt wastewater (CCD) comprised of sodium hydroxide and potassium hy	Source: Stripping and acid or caustic cleaning
Waste Codes:	D002	CAS Codes:
Form:	Caustic aqueous waste without cyanides	
Reported:	1307000.00 GAL = 4946285.95 KG	Managed Onsite: 4946285.95 KG
Shipments:		
Waste Stream:	Acid debris	Source: Cleanup of spill residues (Not part of an ongoing remediation project)
Waste Codes:	D002	CAS Codes: HCL, HF, 7697-37-2
Form:	Contaminated debris: paper, rags, wood, empty containers, etc.	
Reported:	625.00 LB = 283.44 KG	Managed Onsite: 0.00 KG
Shipments:		
	04/02/2003 19748 CAD009452667 300.00 LB	Incineration - thermal destruction other than use as a fuel
	04/02/2003 19748 CAD009452657 150.00 LB	Incineration - thermal destruction other than use as a fuel
	05/20/2003 19902 CAD009452657 60.00 LB	Incineration - thermal destruction other than use as a fuel
	06/26/2003 27226 CAD009452657 20.00 LB	Incineration - thermal destruction other than use as a fuel
	08/13/2003 27409 CAD009452657 70.00 LB	Incineration - thermal destruction other than use as a fuel
	10/06/2003 27511 CAD009452657 5.00 LB	Incineration - thermal destruction other than use as a fuel
	12/01/2003 21779 CAD009452657 20.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:	Investigation derived waste (water w/ benzene)	Source: Investigation Derived Waste approved and overseen by DEQ or EPA
Waste Codes:	D018, F002	CAS Codes:
Form:	Very dilute aqueous waste containing more than 99% water	
Reported:	265.00 GAL = 1002.88 KG	Managed Onsite: 1002.88 KG
Shipments:		
Waste Stream:	Investigation derived waste (water w/ benzene and trichloroethene)	Source: Investigation Derived Waste approved and overseen by DEQ or EPA
Waste Codes:	D018, D040, F002	CAS Codes:
Form:	Very dilute aqueous waste containing more than 99% water	
Reported:	55.00 GAL = 208.15 KG	Managed Onsite: 208.15 KG
Shipments:		
Waste Stream:	Investigation derived waste (water w/ trichloroethene)	Source: Investigation Derived Waste approved and overseen by DEQ or EPA
Waste Codes:	D040, F002	CAS Codes:
Form:	Very dilute aqueous waste containing more than 99% water	
Reported:	90.00 GAL = 340.60 KG	340.60 KG

**Managed
Onsite:**

Shipments:

Waste Stream: Investigation derived waste (water w/ trichloroethene and vinyl chloride)

Source: Investigation Derived Waste approved and overseen by DEQ or EPA

Waste Codes: D040, D043, F002

CAS Codes:

Form: Very dilute aqueous waste containing more than 99% water

Reported: 100.00 GAL = 378.45 KG

Managed Onsite: 378.45 KG

Shipments:

Waste Stream: Investigation derived waste (PPE)

Source: Investigation Derived Waste approved and overseen by DEQ or EPA

Waste Codes: D018, D040, F002

CAS Codes:

Form: Contaminated debris: paper, rags, wood, empty containers, etc.

Reported: 50.00 LB = 22.68 KG

Managed Onsite: 0.00 KG

Shipments: 10/06/2003 01234 ORD089452353 50.00 LB Landfill or surface impoundment that will be closed as landfill

Waste Stream: Investigation derived waste (PPE)

Source: Investigation Derived Waste approved and overseen by DEQ or EPA

Waste Codes: D018, F002

CAS Codes:

Form: Contaminated debris: paper, rags, wood, empty containers, etc.

Reported: 50.00 LB = 22.68 KG

Managed Onsite: 0.00 KG

Shipments: 10/16/2003 01234 ORD089452353 50.00 LB Landfill or surface impoundment that will be closed as landfill

Waste Stream: Investigation derived waste (soil w/ benzene)

Source: Investigation Derived Waste approved and overseen by DEQ or EPA

Waste Codes: D018, F002

CAS Codes:

Form: Contaminated soil

Reported: 900.00 LB = 408.15 KG

Managed Onsite: 0.00 KG

Shipments: 10/05/2003 01234 ORD089452353 900.00 LB Landfill or surface impoundment that will be closed as landfill

Waste Stream: Investigation derived waste (soil w/ benzene)

Source: Investigation Derived Waste approved and overseen by DEQ or EPA

Waste Codes: D018

CAS Codes:

Form: Contaminated soil

Reported: 800.00 LB = 362.80 KG

Managed Onsite: 0.00 KG

Shipments: 12/01/2003 01257 ORD089452353 800.00 LB Land treatment or application

Waste Stream: Investigation derived waste (PPE)


Source: Investigation Derived Waste approved and overseen by DEQ or EPA

Waste Codes: D018

CAS Codes:

Form: Contaminated debris: paper, rags, wood, empty containers, etc.

Reported: 275.00 LB = 124.71 KG		Managed Onsite: 0.00 KG	
Shipments:	12/01/2003 01257 ORD089452353	275.00 LB	Landfill or surface impoundment that will be closed as landfill
Waste Stream:	Labpack paint storage cabinets		Source: Discarding off-specification or out-of-date chemicals or products
Waste Codes:	D001, D035		CAS Codes:
Form: Lab packs with no acute hazardous waste			
Reported: 193.00 LB = 87.53 KG		Managed Onsite: 0.00 KG	
Shipments:	05/20/2003 01178 AZD009015389	10.00 LB	Incineration - thermal destruction other than use as a fuel
	08/13/2003 27405 CAD009452657	175.00 LB	Incineration - thermal destruction other than use as a fuel
	12/01/2003 21782 CAD009452657	8.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:	Excess sodium metabisulfite		Source: Discarding off-specification or out-of-date chemicals or products
Waste Codes:	D003		CAS Codes:
Form: Lab packs with no acute hazardous waste			
Reported: 1.00 LB = 0.45 KG		Managed Onsite: 0.00 KG	
Shipments:	05/20/2003 01178 AZD009015389	1.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:	Excess bromine		Source: Discarding off-specification or out-of-date chemicals or products
Waste Codes:	D003		CAS Codes:
Form: Lab packs with no acute hazardous waste			
Reported: 3.00 LB = 1.36 KG		Managed Onsite: 0.00 KG	
Shipments:	05/20/2003 01178 AZD009015389	3.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:	Excess tetramethylammonium hydroxide		Source: Discarding off-specification or out-of-date chemicals or products
Waste Codes:	D002		CAS Codes:
Form: Lab packs with no acute hazardous waste			
Reported: 40.00 LB = 18.14 KG		Managed Onsite: 0.00 KG	
Shipments:	05/20/2003 01178 AZD009015389	40.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:	Mercuric iodide waste from lab analyses		Source: Laboratory analytical wastes (used chemicals)
Waste Codes:	D009		CAS Codes:
Form: Other aqueous waste or wastewaters			
Reported: 3.00 LB = 1.36 KG		Managed Onsite: 0.00 KG	

Shipments:		04/02/2003	19748	CAD009452657	3.00 LB	Incineration - thermal destruction other than use as a fuel
Waste Stream:		Cadmium waste from lab analyses			Source: Laboratory analytical wastes (used chemicals)	
Waste Codes:		D006			CAS Codes:	
Form:		Very dilute aqueous waste containing more than 99% water				
Reported:		2.00 LB = 0.91 KG			Managed Onsite: 0.00 KG	
Shipments:		02/06/2003	39066	CAD009452657	2.00 LB	Incineration - thermal destruction other than use as a fuel
 2002	LQG	20	320970.74294175		12/24/2002	02/18/2003
Waste Stream:		RCRA exempt waste water (CCD) comprised of sodium hydroxide and potassium h			Source: Caustic (alkali) cleaning	
Waste Codes:		D002			CAS Codes:	
Form:		Caustic aqueous waste				
Reported:		1459000.00 GAL = 5521523.49 KG			Managed Onsite: 5521523.49 KG	
Shipments:						
Waste Stream:		Broken fluorescent light bulbs			Source: Other production-derived one-time and intermittent processes	
Waste Codes:		D009			CAS Codes:	
Form:		Other waste inorganic solids				
Reported:		3.00 LB = 1.36 KG			Managed Onsite: 0.00 KG	
Shipments:		09/17/2002	49469	CAD009452657	3.00 LB	Secondary smelting
Waste Stream:		Mercury Debris			Source: Other cleaning and degreasing	
Waste Codes:		D009			CAS Codes:	
Form:		Lab packs of old chemicals only				
Reported:		27.00 LB = 12.24 KG			Managed Onsite: 0.00 KG	
Shipments:		01/10/2002	50364	CAD009452657	14.00 LB	Incineration-solids
		06/13/2002	77920	CAD009452657	8.00 LB	Incineration-solids
		08/29/2002	49383	CAD009452657	5.00 LB	Incineration-solids
Waste Stream:		RCRA exempt waste water (CAD) comprised of hydrofluoric acid, hydrochloric			Source: Etching	
Waste Codes:		D002			CAS Codes: 7647-01-0, 7664-39-3, 7697-37-2	
Form:		Acidic aqueous waste				
Reported:		83300000.00 GAL = 315434192.50 KG			Managed Onsite: 315434192.50 KG	
Shipments:						
Waste Stream:		Chromic Acid Wash			Source: Etching	
Waste Codes:		D002, D007			CAS Codes: 7664-39-3, 7697-37-2	
Form:		Acidic aqueous waste				
Reported:		18934.50 LB = 8586.80 KG			Managed Onsite: 0.00 KG	

Shipments:	02/04/2002	68076	WAD991281767	3672.00 LB	Chrome reduction followed by chemical precipitation
	04/24/2002	72347	WAD991281767	4130.50 LB	Chrome reduction followed by chemical precipitation
	06/18/2002	74673	WAD991281767	2295.00 LB	Chrome reduction followed by chemical precipitation
	07/17/2002	74877	WAD991281767	2341.00 LB	Chrome reduction followed by chemical precipitation
	08/23/2002	76386	WAD991281767	2111.00 LB	Chrome reduction followed by chemical precipitation
	09/19/2002	77847	WAD991281767	2200.00 LB	Chrome reduction followed by chemical precipitation
	12/02/2002	80515	WAD991281767	2185.00 LB	Chrome reduction followed by chemical precipitation

Waste Stream:	Waste contaminated rags and debris, waste wax	Source:	Other cleaning and degreasing
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Waste Codes:	D001, F005	CAS Codes:	
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Form:	Other nonhalogenated organic solids
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Reported:	5271.00 LB = 2390.40 KG	Managed Onsite:	0.00 KG
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Shipments:	01/10/2002	50364	CAD009452657	473.00 LB	Incineration-solids
	02/21/2002	78938	CAD009452657	400.00 LB	Incineration-solids
	06/13/2002	77920	CAD009452657	943.00 LB	Incineration-solids
	08/01/2002	49266	CAD009452657	901.00 LB	Incineration-solids
	08/29/2002	49383	CAD009452657	414.00 LB	Incineration-solids
	09/17/2002	49469	CAD009452657	247.00 LB	Incineration-solids
	10/30/2002	38833	CAD009452657	532.00 LB	Incineration-solids
	12/19/2002	38919	CAD009452657	646.00 LB	Incineration-solids
	04/08/2002	79049	CAD009452657	715.00 LB	Energy recovery-sludges

Waste Stream:	Lab pack paint storage cabinets	Source:	Discarding out-of-date products or chemicals
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Waste Codes:	D001	CAS Codes:	
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Form:	Lab packs of mixed wastes, chemicals, lab wastes
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Reported:	70.00 LB = 31.75 KG	Managed Onsite:	0.00 KG
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Shipments:	09/17/2002	49471	CAD009452657	10.00 LB	Energy recovery-liquids
	07/10/2002	77658	CAD009452657	60.00 LB	Secondary smelting

Waste Stream:	Chrome debris	Source:	Etching
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Waste Codes:	D007	CAS Codes:	
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Form:	Other waste inorganic solids
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Reported:	493.00 LB = 223.58 KG	Managed Onsite:	0.00 KG
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Shipments:	09/23/2002	22886	ORD089452353	250.00 LB	Other stabilization
	12/02/2002	22989	ORD089452353	168.00 LB	Other stabilization
	12/02/2002	22989	ORD089452353	75.00 LB	Other stabilization

Waste Stream:	Chrome debris	Source:	Discontinue use of process equipment
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Waste Codes:	D007	CAS Codes:	
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Form:	Other waste inorganic solids
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Reported:	5940.00 LB = 2693.79 KG	Managed Onsite:	0.00 KG
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Managed Onsite:					
Shipments:	06/24/2002	22615	ORD089452353	5940.00 LB	Other stabilization
Waste Stream:	Lab pack contaminated pumps with hydrofluoric acid			Source:	Discarding out-of-date products or chemicals
Waste Codes:	D002			CAS Codes:	7664-39-3
Form:	Lab packs of mixed wastes, chemicals, lab wastes				
Reported:	15.00 LB = 6.80 KG			Managed Onsite:	0.00 KG
Shipments:	09/17/2002	49471	CAD009452657	15.00 LB	Incineration-liquids
Waste Stream:	Acid debris (Process cleanup)			Source:	Cleanup of spill residues
Waste Codes:	D002			CAS Codes:	7664-39-3
Form:	Lab packs of old chemicals only				
Reported:	5.00 LB = 2.27 KG			Managed Onsite:	0.00 KG
Shipments:	12/19/2002	38919	CAD009452657	5.00 LB	Incineration-solids
Waste Stream:	Cadmium Waste from Nitrate Analysis			Source:	Laboratory wastes
Waste Codes:	D006			CAS Codes:	
Form:	Other lab packs				
Reported:	5.00 LB = 2.27 KG			Managed Onsite:	0.00 KG
Shipments:	12/19/2002	38919	CAD009452657	5.00 LB	Incineration-solids
Waste Stream:	Geoprobe GP02-02 decon water			Source:	Investigation derived waste
Waste Codes:	D018, D040			CAS Codes:	
Form:	Aqueous waste with low other toxic organics				
Reported:	918.00 LB = 416.31 KG			Managed Onsite:	0.00 KG
Shipments:	06/13/2002	77920	CAD009452657	918.00 LB	Fractionation/distillation
Waste Stream:	Soil contaminated with benzene			Source:	Investigation derived waste
Waste Codes:	D018			CAS Codes:	
Form:	Soil contaminated with organics				
Reported:	175.00 LB = 79.36 KG			Managed Onsite:	0.00 KG
Shipments:	06/13/2002	77920	CAD009452657	175.00 LB	Incineration-solids
Waste Stream:	Lab pack paint storage cabinets			Source:	Discarding out-of-date products or chemicals
Waste Codes:	D002			CAS Codes:	
Form:	Lab packs of mixed wastes, chemicals, lab wastes				
Reported:	56.00 LB = 25.40 KG			Managed Onsite:	0.00 KG
Shipments:	06/13/2002	50352	CAD009452657	6.00 LB	Incineration-liquids
	07/10/2002	77658	CAD009452657	50.00 LB	Incineration-liquids


Waste Stream:	Used oil with halogens			Source: Oil changes	
Waste Codes:	D001, F002			CAS Codes:	
Form:	Waste oil				
Reported:	413.00 LB = 187.30 KG			Managed Onsite:	0.00 KG
Shipments:	<u>06/13/2002</u>	<u>77920</u>	<u>CAD009452657</u>	<u>413.00 LB</u>	<u>Energy recovery-liquids</u>

Waste Stream:	Lab pack paint storage cabinets			Source:	Discarding out-of-date products or chemicals
Waste Codes:	D001, D035			CAS Codes:	
Form:	Lab packs of mixed wastes, chemicals, lab wastes				
Reported:	220.00 LB = 99.77 KG			Managed Onsite:	0.00 KG
Shipments:	07/10/2002	77658	CAD009452657	220.00 LB	Energy recovery-liquids

Waste Stream:	Lab pack paint storage cabinets			Source:	Discarding out-of-date products or chemicals
Waste Codes:	F002			CAS Codes:	
Form:	Lab packs of mixed wastes, chemicals, lab wastes				
Reported:	6.00 LB = 2.72 KG			Managed Onsite:	0.00 KG
Shipments:	09/17/2002	49471	CAD009452657	6.00 LB	Incineration-liquids

Waste Stream:	contaminated water			Source:	Investigation derived waste
Waste Codes:	D043			CAS Codes:	
Form:	Aqueous waste with low other toxic organics				
Reported:	459.00 LB = 208.16 KG			Managed Onsite:	0.00 KG
Shipments:	06/13/2002	77920	CAD009452657	459.00 LB	Fractionation/distillation

Waste Stream:		Partial filled and empty aerosol cans		Source: Painting	
Waste Codes:		D001, D003		CAS Codes:	
Form:		Other lab packs			
Reported:		125.00 LB = 56.69 KG		Managed Onsite: 0.00 KG	
Shipments:	04/08/2002	04082	CAD009452657	50.00 LB	Energy recovery-liquids
	08/29/2002	01094	CAD009452657	10.00 LB	Secondary smelting
	12/19/2002	01143	CAD009452657	50.00 LB	Secondary smelting
	02/21/2002	78938	CAD009452657	15.00 LB	Fuel blending

 2001	LQG	14	472157.8804405	12/26/2001	02/28/2002
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Waste Stream:	Inert absorbent, equipment and PPE contaminate with chromic acid and residu			Source:	Clothing and personal protective equipment
Waste Codes:	D007			CAS Codes:	
Form:	Other waste inorganic solids				
Reported:	322.00 LB = 146.00 KG			Managed Onsite:	0.00 KG
Shipments:	04/10/2001	21362	ORD089452353	175.00 LB	Landfill
	04/10/2001	21574	ORD089452353	147.00 LB	Landfill

Waste Stream:	Waste product flammable liquids, expired product			Source:	Discarding out-of-date products or chemicals
Waste Codes:	D001, U220			CAS Codes:	
Form:	Nonhalogenated solvent				
Reported:	600.00 LB = 272.00 KG			Managed Onsite:	0.00 KG
Shipments:	02/08/2001	020801	AZD009015389	600.00 LB	Incineration-liquids
Waste Stream:	Chromic acid solution, composed of Nitric, Hydrofluoric, Acetic and Chromic			Source:	Laboratory wastes
Waste Codes:	D002, D007			CAS Codes:	7664-39-3, 7697-37-2
Form:	Spent acid with metals				
Reported:	2320.00 GAL = 14045.80 KG			Managed Onsite:	0.00 KG
Shipments:	01/03/2001	55064	WAD991281767	450.00 GAL	Chrome reduction followed by chemical precipitation
	03/07/2001	56841	WAD991281767	300.00 GAL	Chrome reduction followed by chemical precipitation
	05/02/2001	56842	WAD991281767	275.00 GAL	Chrome reduction followed by chemical precipitation
	07/02/2001	60905	WAD991281767	395.00 GAL	Chrome reduction followed by chemical precipitation
	09/19/2001	64365	WAD991281767	325.00 GAL	Chrome reduction followed by chemical precipitation
	12/03/2001	67500	WAD991281767	425.00 GAL	Chrome reduction followed by chemical precipitation
Waste Stream:	Partial full spray cans			Source:	Painting
Waste Codes:	D001, D003			CAS Codes:	
Form:	Mixed lab packs				
Reported:	150.00 LB = 68.00 KG			Managed Onsite:	0.00 KG
Shipments:	01/11/2001	515212	CAD009452657	100.00 LB	Energy recovery-liquids
	04/12/2001	515502	CAD009452657	15.00 LB	Energy recovery-liquids
	10/02/2001	237874	CAD009452657	35.00 LB	Energy recovery-liquids
Waste Stream:	Lab Pack spill residue (flammable)			Source:	Cleanup of spill residues
Waste Codes:	D001			CAS Codes:	
Form:	Nonhalogenated solvent				
Reported:	340.00 LB = 154.00 KG			Managed Onsite:	0.00 KG
Shipments:	05/08/2001	21462	COD980591184	340.00 LB	Energy recovery-solids
Waste Stream:	RCRA exempt wastewater (CCD) comprised of Sodium Hydroxide and Potassium -			Source:	Caustic (alkali) cleaning
Waste Codes:	D002			CAS Codes:	
Form:	Caustic aqueous waste				
Reported:	1563800.00 GAL = 5918134.64 KG			Managed Onsite:	5918134.64 KG
Shipments:					
Waste Stream:	RCRA exempt wastewater (CAD) comprised of Hydrofluoric acid, Hydrochloric a			Source:	Etching

Waste Codes:	D002			CAS Codes:	7647-01-0, 7664-39-3, 7697-37-2	
Form:	Acidic aqueous waste					
Reported:	123120000.00 GAL = 466221582.00 KG			Managed Onsite:	466221582.00 KG	
Shipments:						
Waste Stream:	Chrome sludge			Source:	Other pollution control or waste treatment	
Waste Codes:	D007			CAS Codes:		
Form:	Sediment or lagoon dragout contaminated with inorganics only					
Reported:	210.00 LB = 95.00 KG			Managed Onsite:	0.00 KG	
Shipments:	08/01/2001	21623	ORD089452353	210.00 LB	Landfill	
Waste Stream:	Polishing rags, debris, and unused wax product			Source:	Other cleaning and degreasing	
Waste Codes:	D001, F005			CAS Codes:		
Form:	Nonhalogenated solvent					
Reported:	4799.00 LB = 2176.00 KG			Managed Onsite:	0.00 KG	
Shipments:	01/11/2001	515212	CAD009452657	626.00 LB	Incineration-solids	
	02/08/2001	515306	CAD009452657	593.00 LB	Incineration-solids	
	03/15/2001	515416	CAD009452657	620.00 LB	Incineration-solids	
	04/12/2001	515502	CAD009452657	200.00 LB	Incineration-solids	
	05/10/2001	510579	CAD009452657	419.00 LB	Incineration-solids	
	06/11/2001	510697	CAD009452657	231.00 LB	Incineration-solids	
	06/27/2001	510771	CAD009452657	423.00 LB	Incineration-solids	
	07/31/2001	506741	CAD009452657	225.00 LB	Incineration-solids	
	09/17/2001	537756	CAD009452657	476.00 LB	Incineration-solids	
	10/02/2001	237874	CAD009452657	213.00 LB	Incineration-solids	
	11/06/2001	250100	CAD009452657	400.00 LB	Incineration-solids	
	12/03/2001	350244	CAD009452657	373.00 LB	Incineration-solids	
Waste Stream:	Debris contaminated with Mercury			Source:	Other	
Waste Codes:	D009			CAS Codes:		
Form:	Other waste inorganic solids					
Reported:	125.00 LB = 57.00 KG			Managed Onsite:	0.00 KG	
Shipments:	03/15/2001	515416	CAD009452657	5.00 LB	Incineration-solids	
	04/12/2001	515502	CAD009452657	10.00 LB	Incineration-solids	
	05/10/2001	510579	CAD009452657	100.00 LB	Incineration-solids	
	10/02/2001	237874	CAD009452657	10.00 LB	Incineration-solids	
Waste Stream:	Out of date chemicals and debris (Lab Pack)			Source:	Discarding out-of-date products or chemicals	
Waste Codes:	D002			CAS Codes:		
Form:	Mixed lab packs					
Reported:	650.00 LB = 295.00 KG			Managed Onsite:	0.00 KG	
Shipments:	05/08/2001	21462	COD980591184	400.00 LB	Incineration-solids	
	07/10/2001	21573	COD980591184	250.00 LB	Incineration-solids	

Waste Stream:	Out of date resin flammable (Lab Pack)			Source: Discarding out-of-date products or chemicals	
Waste Codes:	D001			CAS Codes:	
Form:	Nonhalogenated solvent				
Reported:	60.00 LB = 27.00 KG			Managed Onsite:	0.00 KG
Shipments:	07/10/2001	21573	CAD980591184	60.00 LB	Incineration-solids
Waste Stream:	Oil and Solvent Facility clean out and spent solvent			Source: Other cleaning and degreasing	
Waste Codes:	D001, F003, F005			CAS Codes:	
Form:	Nonhalogenated solvent				
Reported:	15.00 GAL = 57.00 KG			Managed Onsite:	0.00 KG
Shipments:	11/06/2001	350100	CAD009452657	15.00 GAL	Energy recovery-liquids
Waste Stream:	Waste Paint Flammable (Lab Pack)			Source: Discarding out-of-date products or chemicals	
Waste Codes:	D001			CAS Codes:	
Form:	Organic paint, ink, lacquer, or varnish				
Reported:	1700.00 LB = 771.00 KG			Managed Onsite:	0.00 KG
Shipments:	02/13/2001	21282	COD980591184	800.00 LB	Incineration-solids
	03/13/2001	21333	COD980591184	400.00 LB	Incineration-solids
	05/08/2001	21462	COD980591184	160.00 LB	Incineration-solids
	06/12/2001	21540	COD980591184	40.00 LB	Incineration-solids
	11/07/2001	21880	COD980591184	50.00 LB	Incineration-solids
	12/11/2001	21919	COD980591184	250.00 LB	Incineration-solids
2000	LQG	22	469059.50225075	01/05/2001	02/12/2001
Waste Stream:	Debris contaminated with mercury.			Source: Other	
Waste Codes:	D009			CAS Codes:	
Form:	Other waste inorganic solids				
Reported:	30.00 LB = 14.00 KG			Managed Onsite:	0.00 KG
Shipments:	04/06/2000	43241	CAD009452657	10.00 LB	Retorting
	09/07/2000	01909	CAD009452657	5.00 LB	Retorting
	11/06/2000	12175	CAD009452657	10.00 LB	Retorting
	12/15/2000	12305	CAD009452657	5.00 LB	Retorting
Waste Stream:	Dionized water with residual mercury.			Source: Other cleaning and degreasing	
Waste Codes:	D009			CAS Codes:	
Form:	Other waste inorganic solids				
Reported:	25.00 LB = 11.00 KG			Managed Onsite:	0.00 KG
Shipments:	11/06/2000	12175	CAD009452657	25.00 LB	Biological treatment
Waste Stream:	Alcohol mixture.			Source: Other cleaning and degreasing	
Waste Codes:	D001			CAS Codes:	

Form: Nonhalogenated solvent					
Reported: 667.00 LB = 302.00 KG				Managed Onsite: 0.00 KG	
Shipments:	01/20/2000	92780	CAD009452657	254.00 LB	Energy recovery-liquids
	03/02/2000	57185	CAD009452657	413.00 LB	Energy recovery-liquids
Waste Stream:	Polishing rags, debris, & unused wax products.			Source:	Other cleaning and degreasing
Waste Codes:	D001, F005			CAS Codes:	
Form: Nonhalogenated solvent					
Reported: 9094.00 LB = 4124.00 KG				Managed Onsite: 0.00 KG	
Shipments:	01/20/2000	92780	CAD009452657	372.00 LB	Incineration-solids
	02/03/2000	56827	CAD009452657	230.00 LB	Incineration-solids
	03/02/2000	57185	CAD009452657	634.00 LB	Incineration-solids
	04/06/2000	43241	CAD009452657	1221.00 LB	Incineration-solids
	05/04/2000	43355	CAD009452657	793.00 LB	Incineration-solids
	06/08/2000	43465	CAD009452657	1411.00 LB	Incineration-solids
	07/06/2000	01761	CAD009452657	676.00 LB	Incineration-solids
	08/10/2000	01839	CAD009452657	643.00 LB	Incineration-solids
	09/07/2000	01909	CAD009452657	672.00 LB	Incineration-solids
	10/06/2000	12055	CAD009452657	630.00 LB	Incineration-solids
	11/06/2000	12175	CAD009452657	816.00 LB	Incineration-solids
	12/15/2000	12305	CAD009452657	996.00 LB	Incineration-solids
Waste Stream:	Partiall full aerosol container with paint cleaners, adhesives, etc.			Source: Painting	
Waste Codes:	D001, D003			CAS Codes:	
Form: Mixed lab packs					
Reported: 152.00 LB = 69.00 KG				Managed Onsite: 0.00 KG	
Shipments:	01/20/2000	92780	CAD009452657	67.00 LB	Energy recovery-liquids
	04/27/2000	20336	COD980591184	10.00 LB	Energy recovery-liquids
	01/31/2000	20148	COD980591184	75.00 LB	Energy recovery-liquids
Waste Stream:	Inert absorbant equipment & ppp contaminated with chromic acid & residue.			Source: Clothing and personal protective equipment	
Waste Codes:	D007			CAS Codes:	
Form: Other waste inorganic solids					
Reported: 276.00 LB = 125.00 KG				Managed Onsite: 0.00 KG	
Shipments:	03/07/2000	20241	ORD089452353	106.00 LB	Other stabilization
	06/28/2000	20475	ORD089452353	120.00 LB	Other stabilization
	10/03/2000	20797	ORD089452353	50.00 LB	Other stabilization
Waste Stream:	Chromic acid solution, composed of hydrofluoric, nitric, acetic, & chromic			Source: Laboratory wastes	
Waste Codes:	D002, D007			CAS Codes:	
Form: Spent acid with metals					
Reported: 27613.00 LB = 12522.50 KG				Managed Onsite: 0.00 KG	
Shipments:	11/09/2000	53115	WAD991281767	4170.00 LB	Chrome reduction followed by chemical precipitation
	02/03/2000	20169	COD980591184		Neutralization only

			3753.00 LB	
02/03/2000	20169	COD980591184	1835.00 LB	Neutralization only
04/07/2000	20299	COD980591184	3100.00 LB	Neutralization only
04/27/2000	20336	COD980591184	1870.00 LB	Neutralization only
06/28/2000	20475	COD980591184	5504.00 LB	Neutralization only
09/05/2000	20599	COD980591184	3628.00 LB	Neutralization only

Waste Stream:	Lab pack, old product. Flammable.			Source:	Discarding out-of-date products or chemicals
Waste Codes:	D001, D003, U160			CAS Codes:	
Form:	Mixed lab packs				
Reported:	30.00 LB = 14.00 KG			Managed Onsite:	0.00 KG
Shipments:	02/03/2000	20155	ILD098642424	30.00 LB	Incineration-liquids


Waste Stream:	Labpace, old product. Corrosive.			Source:	Discarding out-of-date products or chemicals
Waste Codes:	D002			CAS Codes:	
Form:	Mixed lab packs				
Reported:	520.00 LB = 236.00 KG			Managed Onsite:	0.00 KG
Shipments:	06/06/2000	20423	COD980591184	400.00 LB	Incineration-solids
	12/05/2000	20832	COD980591184	60.00 LB	Incineration-solids
	06/06/2000	20423	COD980591184	50.00 LB	Incineration-solids
	09/12/2000	20662	COD980591184	10.00 LB	Incineration-liquids

Waste Stream:	Labpack, old products & spill residue.			Source:	Discarding out-of-date products or chemicals
Waste Codes:	D001, D002, U002, U150			CAS Codes:	
Form:	Mixed lab packs				
Reported:	400.00 LB = 181.00 KG			Managed Onsite:	0.00 KG
Shipments:	06/06/2000	20423	COD980591184	400.00 LB	Incineration-solids

Waste Stream:	Lab pack old chemicals & spill residue. Flammable.			Source:	Cleanup of spill residues
Waste Codes:	D001			CAS Codes:	
Form:	Mixed lab packs				
Reported:	20.00 LB = 9.00 KG			Managed Onsite:	0.00 KG
Shipments:	11/14/2000	20814	COD980591184	20.00 LB	Incineration-solids

Waste Stream:	Labpack, old products. Flammable.			Source:	Discarding out-of-date products or chemicals
Waste Codes:	D001, D035			CAS Codes:	
Form:	Mixed lab packs				
Reported:	75.00 LB = 34.00 KG			Managed Onsite:	0.00 KG
Shipments:	08/08/2000	20545	COD980591184	40.00 LB	Fuel blending

	09/12/2000	20545	COD980591184	35.00 LB	Fuel blending
Waste Stream:	Labpack, Expired products.			Source:	Discarding out-of-date products or chemicals
Waste Codes:	D003			CAS Codes:	
Form:	Mixed lab packs				
Reported:	10.00 LB = 5.00 KG			Managed Onsite:	0.00 KG
Shipments:	08/08/2000	20545	COD980591184	10.00 LB	Incineration-solids
Waste Stream:	Labpack, expired products. Flammable.			Source:	Discarding out-of-date products or chemicals
Waste Codes:	D001, D005, F003, F005			CAS Codes:	
Form:	Mixed lab packs				
Reported:	300.00 LB = 136.00 KG			Managed Onsite:	0.00 KG
Shipments:	01/31/2000	20148	COD980591184	300.00 LB	Incineration-solids
Waste Stream:	Labpack, old products. Flammable.			Source:	Discarding out-of-date products or chemicals
Waste Codes:	D001, F003, F005, U159			CAS Codes:	
Form:	Mixed lab packs				
Reported:	240.00 LB = 109.00 KG			Managed Onsite:	0.00 KG
Shipments:	01/31/2000	20148	COD980591184	240.00 LB	Incineration-solids
Waste Stream:	Lab pack. Mercury.			Source:	Discarding out-of-date products or chemicals
Waste Codes:	D009			CAS Codes:	
Form:	Mixed lab packs				
Reported:	10.00 LB = 5.00 KG			Managed Onsite:	0.00 KG
Shipments:	11/14/2000	20814	COD980591184	10.00 LB	Retorting
Waste Stream:	Expired products. Toxic.			Source:	Discarding out-of-date products or chemicals
Waste Codes:	D003, U226			CAS Codes:	
Form:	Lab packs of mixed wastes, chemicals, lab wastes				
Reported:	5.00 LB = 2.00 KG			Managed Onsite:	0.00 KG
Shipments:	01/31/2000	20148	COD980591184	5.00 LB	Incineration-gases
Waste Stream:	Waste product. Corrosive.			Source:	Discarding out-of-date products or chemicals
Waste Codes:	D002			CAS Codes:	
Form:	Caustic aqueous waste				
Reported:	664.00 LB = 301.00 KG			Managed Onsite:	0.00 KG
Shipments:	08/30/2000	78332	IND000646943	459.00 LB	Incineration-solids
	01/31/2000	20148	COD980591184	170.00 LB	Incineration-solids
	01/31/2000	20148	COD980591184	35.00 LB	Incineration-solids
	Expired product. Flammable.			Source:	

Waste Stream:		Discarding out-of-date products or chemicals			
Waste Codes:	D001, D035, F003, U002		CAS Codes:		
Form:	Lab packs of mixed wastes, chemicals, lab wastes				
Reported:	300.00 LB = 136.00 KG		Managed Onsite:	0.00 KG	
Shipments:	01/31/2000	20148	COD980591184	300.00 LB	Incineration-solids
Waste Stream:	Waste product. Flammable liquids.		Source:	Discarding out-of-date products or chemicals	
Waste Codes:	D001		CAS Codes:		
Form:	Nonhalogenated solvent				
Reported:	934.00 LB = 424.00 KG		Managed Onsite:	0.00 KG	
Shipments:	06/08/2000	43465	CAD009452657	334.00 LB	Incineration-liquids
	06/08/2000	43465	CAD009452657	250.00 LB	Fuel blending
	04/07/2000	20299	COD980591184	350.00 LB	Incineration-liquids
Waste Stream:	RCRA exempt waste waters (CAD) comprised of Hydrofluoric acid, hydrochloric		Source:	Etching	
Waste Codes:	D002		CAS Codes:	7647-01-0, 7664-39-3, 7697-37-2	
Form:	Acidic aqueous waste				
Reported:	122340000.00 GAL = 462990530.55 KG		Managed Onsite:	462990530.55 KG	
Shipments:					
Waste Stream:	RCRA exempt waste waters (CCD) comprised of sodium hydroxide & potassium hy		Source:	Caustic (alkali) cleaning	
Waste Codes:	D002		CAS Codes:		
Form:	Caustic aqueous waste				
Reported:	1598700.00 GAL = 6050212.21 KG		Managed Onsite:	6050212.21 KG	
Shipments:					
 1999	SQG	27	540850.603622688	01/06/2000	02/25/2000
Waste Stream:	RCRA exempt waste waters (CCD) comprised of sodium hydroxide and potassium		Source:	Caustic (alkali) cleaning	
Waste Codes:	D002		CAS Codes:		
Form:	Caustic aqueous waste				
Reported:	1519500.00 GAL = 5750483.17 KG		Managed Onsite:	5750483.17 KG	
Shipments:					
Waste Stream:	RCRA exempt waste waters (CAD) comprised of hydrofluoric acid, hydrochloric		Source:	Etching	
Waste Codes:	D002		CAS Codes:	7647-01-0, 7664-39-3, 7697-37-2	
Form:	Acidic aqueous waste				
Reported:	141388000.00 GAL = 535076877.01 KG		Managed Onsite:	535076877.01 KG	
Shipments:					
Waste Stream:			Source:	Etching	

RCRA exempt waste water (CAW)
comprised of chromic acid and hydrofluoric
ac

Waste Codes:	D002, D007			CAS Codes: 7664-39-3	
Form:	Spent acid with metals				
Reported:	4025.00 GAL = 15232.44 KG			Managed Onsite:	15232.44 KG
Shipments:					
Waste Stream:	Chromium hydroxide sludge from treatment of chromic acid waste waters.			Source: Wastewater treatment	
Waste Codes:	D007			CAS Codes:	
Form:	"Dry" lime or metal hydroxide solids chemically "fixed"				
Reported:	4448.00 LB = 2017.00 KG			Managed Onsite:	0.00 KG
Shipments:	03/02/1999	91518	ORD089452353	574.00 LB	Landfill
	04/09/1999	95839	ORD089452353	628.00 LB	Landfill
	06/04/1999	99002	ORD089452353	554.00 LB	Landfill
	09/17/1999	99014	ORD089452353	1160.00 LB	Landfill
	12/21/1999	99021	ORD089452353	1029.00 LB	Landfill
Waste Stream:	Alcohol mixture			Source: Other cleaning and degreasing	
Waste Codes:	D001			CAS Codes:	
Form:	Nonhalogenated solvent				
Reported:	4619.00 LB = 2095.00 KG			Managed Onsite:	0.00 KG
Shipments:	08/05/1999	67831	CAD009452657	413.00 LB	Energy recovery-liquids
	09/02/1999	67979	CAD009452657	826.00 LB	Energy recovery-liquids
	10/07/1999	92243	CAD009452657	413.00 LB	Energy recovery-liquids
	11/05/1999	92392	CAD009452657	413.00 LB	Energy recovery-liquids
	12/02/1999	92622	CAD009452657	413.00 LB	Energy recovery-liquids
	04/01/1999	66450	CAD009452657	413.00 LB	Energy recovery-liquids
	06/03/1999	66721	CAD009452657	1239.00 LB	Energy recovery-liquids
	06/15/1999	66789	CAD009452657	75.00 LB	Energy recovery-liquids
Waste Stream:	Inert absorbant, equipment and ppe contaminated with chromic acid and resid			Source: Clothing and personal protective equipment	
Waste Codes:	D007			CAS Codes:	
Form:	Other waste inorganic solids				
Reported:	225.00 LB = 102.00 KG			Managed Onsite:	0.00 KG
Shipments:	05/04/1999	97804	ORD089452353	70.00 LB	Landfill
	08/03/1999	99011	ORD089452353	100.00 LB	Landfill
	11/02/1999	99002	ORD089452353	55.00 LB	Landfill
Waste Stream:	Debris contaminated with mercury			Source: Other	
Waste Codes:	D009			CAS Codes:	
Form:	Other waste inorganic solids				
Reported:	48.00 LB = 22.00 KG			Managed Onsite:	0.00 KG
Shipments:	02/01/1999	71763	CAD009452657	2.00 LB	Other aqueous inorganic treatment

06/15/1999	66789	CAD009452657	4.00 LB	Other aqueous inorganic treatment
09/02/1999	67979	CAD009452657	2.00 LB	Other aqueous inorganic treatment
10/07/1999	92243	CAD009452657	40.00 LB	Other aqueous inorganic treatment

Waste Stream:	Polishing rags, debris and unused wax product.			Source:	Other cleaning and degreasing
Waste Codes:	D001, D005			CAS Codes:	
Form:	Nonhalogenated solvent				
Reported:	6377.00 LB = 2892.00 KG			Managed Onsite:	0.00 KG
Shipments:	01/08/1999	71631	CAD009452657	493.00 LB	Incineration-solids
	02/01/1999	71763	CAD009452657	411.00 LB	Incineration-solids
	03/09/1999	71934	CAD009452657	372.00 LB	Incineration-solids
	04/01/1999	66450	CAD009452657	394.00 LB	Incineration-solids
	06/03/1999	66721	CAD009452657	571.00 LB	Incineration-solids
	06/15/1999	66789	CAD009452657	163.00 LB	Incineration-solids
	07/01/1999	67664	CAD009452657	392.00 LB	Incineration-solids
	08/05/1999	67831	CAD009452657	110.00 LB	Incineration-solids
	09/02/1999	67979	CAD009452657	598.00 LB	Incineration-solids
	10/07/1999	92243	CAD009452657	538.00 LB	Incineration-solids
	11/05/1999	92392	CAD009452657	466.00 LB	Incineration-solids
	12/02/1999	92622	CAD009452657	518.00 LB	Incineration-solids
	04/23/1999	98466	CAD009452657	451.00 LB	Incineration-solids
	08/05/1999	67831	CAD009452657	350.00 LB	Incineration-solids


Waste Stream:	Partially full aerosol containers with paint, cleaners, adhesives, etc.			Source: Painting	
Waste Codes:	D001, D003			CAS Codes:	
Form:	Mixed lab packs				
Reported:	174.00 LB = 79.00 KG			Managed Onsite:	0.00 KG
Shipments:	05/04/1999	97805	COD980591184	120.00 LB	Energy recovery-liquids
	11/12/1999	99001	COD980591184	5.00 LB	Energy recovery-liquids
	03/09/1999	71934	CAD009452657	35.00 LB	Energy recovery-liquids
	04/23/1999	98466	CAD009452657	10.00 LB	Energy recovery-liquids
	06/03/1999	66721	CAD009452657	2.00 LB	Energy recovery-liquids
	08/05/1999	67831	CAD009452657	2.00 LB	Energy recovery-liquids

Waste Stream:	Lab pack. PPE contaminated with HF and Nitric Acid			Source:	Clothing and personal protective equipment
Waste Codes:	U134			CAS Codes:	
Form:	Mixed lab packs				
Reported:	340.00 LB = 154.00 KG			Managed Onsite:	0.00 KG
Shipments:	02/05/1999	87189	COD980591184	140.00 LB	Incineration-solids
	02/05/1999	87189	COD980591184	200.00 LB	Incineration-solids

Waste Stream: Lab pack. Potassium permanganate spill residue.				Source: Cleanup of spill residues	
Waste Codes: D001				CAS Codes:	
Form: Mixed lab packs					
Reported: 6.00 LB = 3.00 KG				Managed Onsite: 0.00 KG	
Shipments:	02/05/1999	87189	COD980591184	6.00 LB	Incineration-solids

Waste Stream:	Lab pack. Old chemicals and spill residue Flammable			Source:	Cleanup of spill residues
Waste Codes:	D001			CAS Codes:	
Form:	Mixed lab packs				
Reported:	41.00 LB = 19.00 KG			Managed Onsite:	0.00 KG
Shipments:	03/02/1999	91472	COD980591184	35.00 LB	Incineration-solids
	09/17/1999	99017	COD980591184	6.00 LB	Incineration-solids
Waste Stream:	Lab pack. Old product. Flammable.			Source:	Discarding out-of-date products or chemicals
Waste Codes:	D001, D035, F005			CAS Codes:	
Form:	Mixed lab packs				
Reported:	70.00 LB = 32.00 KG			Managed Onsite:	0.00 KG
Shipments:	04/09/1999	95840	COD980591184	70.00 LB	Incineration-solids
Waste Stream:	Lab pack. Expired flammable liquids.			Source:	Discarding out-of-date products or chemicals
Waste Codes:	D001, D035, F003, F005			CAS Codes:	
Form:	Mixed lab packs				
Reported:	250.00 LB = 113.00 KG			Managed Onsite:	0.00 KG
Shipments:	05/04/1999	98705	COD980591184	250.00 LB	Incineration-solids
Waste Stream:	Lab pack. Expired products.			Source:	Discarding out-of-date products or chemicals
Waste Codes:	D001, D002, F003			CAS Codes:	
Form:	Mixed lab packs				
Reported:	40.00 LB = 18.00 KG			Managed Onsite:	0.00 KG
Shipments:	05/04/1999	97805	COD980591184	40.00 LB	Incineration-solids
Waste Stream:	Lab pack. Expired products.			Source:	Discarding out-of-date products or chemicals
Waste Codes:	D001, D003			CAS Codes:	
Form:	Mixed lab packs				
Reported:	5.00 LB = 2.00 KG			Managed Onsite:	0.00 KG
Shipments:	05/04/1999	97805	COD980591184	5.00 LB	Incineration-solids
Waste Stream:	Lab pack. Expired products.			Source:	Discarding out-of-date products or chemicals
Waste Codes:	D001, D035, F003, F005			CAS Codes:	
Form:	Mixed lab packs				
Reported:	15.00 LB = 7.00 KG			Managed Onsite:	0.00 KG
Shipments:	06/04/1999	99001	COD980591184	15.00 LB	Incineration-gases
Waste Stream:	Waste product. Flammable liquids			Source:	Discarding out-of-date products or chemicals
	D001			CAS Codes:	

Waste Codes:					
Form: Nonhalogenated solvent					
Reported: 100.00 LB = 45.00 KG			Managed Onsite: 0.00 KG		
Shipments:	06/11/1999	99004	COD980591184	70.00 LB	Fuel blending
	11/02/1999	99001	COD980591184	30.00 LB	Fuel blending
Waste Stream: Waste product. Corrosive.			Source: Discarding out-of-date products or chemicals		
Waste Codes: D002			CAS Codes:		
Form: Caustic aqueous waste					
Reported: 717.00 LB = 325.00 KG			Managed Onsite: 0.00 KG		
Shipments:	05/04/1999	97805	COD980591184	250.00 LB	Incineration-solids
	06/04/1999	99001	COD980591184	8.00 LB	Incineration-solids
	08/05/1999	67831	CAD009452657	459.00 LB	Incineration-solids
Waste Stream: Waste product. Cylinder.			Source: Discarding out-of-date products or chemicals		
Waste Codes: D001			CAS Codes:		
Form: Other organic liquids					
Reported: 20.00 LB = 9.00 KG			Managed Onsite: 0.00 KG		
Shipments:	06/11/1999	966328	NJD980536593	20.00 LB	Incineration-gases
Waste Stream: Expired products. Toxic liquids.			Source: Discarding out-of-date products or chemicals		
Waste Codes: U080, U227			CAS Codes:		
Form: Lab packs of mixed wastes, chemicals, lab wastes					
Reported: 35.00 LB = 16.00 KG			Managed Onsite: 0.00 KG		
Shipments:	05/04/1999	97805	COD980591184	35.00 LB	Incineration-solids
Waste Stream: Expired products. Solid.			Source: Discarding out-of-date products or chemicals		
Waste Codes: U202			CAS Codes:		
Form: Lab packs of mixed wastes, chemicals, lab wastes					
Reported: 5.00 LB = 2.00 KG			Managed Onsite: 0.00 KG		
Shipments:	05/04/1999	97805	COD980591184	5.00 LB	Incineration-solids
Waste Stream: Waste mercury contained in manufactured articles.			Source: Discarding out-of-date products or chemicals		
Waste Codes: D009			CAS Codes:		
Form: Other waste inorganic solids					
Reported: 3.00 LB = 1.00 KG			Managed Onsite: 0.00 KG		
Shipments:	06/04/1999	99001	COD980591184	3.00 LB	Retorting
Waste Stream: Waste products. Waste flammable liquids, toxic.			Source: Discarding out-of-date products or chemicals		
Waste Codes: D001, D040			CAS Codes:		

Form: Halogenated solvent					
Reported: 25.00 LB = 11.00 KG			Managed Onsite: 0.00 KG		
Shipments:	05/04/1999	97805	COD980591184	25.00 LB	Incineration-solids
Waste Stream:	Waste product.			Source: Discarding out-of-date products or chemicals	
Waste Codes:	F002			CAS Codes:	
Form: Halogenated solvent					
Reported: 8.00 LB = 4.00 KG			Managed Onsite: 0.00 KG		
Shipments:	11/02/1999	99001	COD980591184	8.00 LB	Incineration-solids
Waste Stream:	Expired products.			Source: Discarding out-of-date products or chemicals	
Waste Codes:	U134			CAS Codes:	
Form: Acidic aqueous waste					
Reported: 80.00 LB = 36.00 KG			Managed Onsite: 0.00 KG		
Shipments:	05/04/1999	97805	COD980591184	80.00 LB	Incineration-solids
Waste Stream:	Waste product aerosol cans.			Source: Discarding out-of-date products or chemicals	
Waste Codes:	D001, D003			CAS Codes:	
Form: Lab packs of mixed wastes, chemicals, lab wastes					
Reported: 15.00 LB = 7.00 KG			Managed Onsite: 0.00 KG		
Shipments:	06/04/1999	99001	COD980591184	15.00 LB	Incineration-gases
 1998	SQG	19	370053.810958508	01/15/1999	02/10/1999
Waste Stream:	Alcohol mixture			Source: Other cleaning and degreasing	
Waste Codes:	D001			CAS Codes:	
Form: Nonhalogenated solvent					
Reported: 1652.00 LB = 749.00 KG			Managed Onsite: 0.00 KG		
Shipments:	03/05/1998	84026	CAD009452657	413.00 LB	Energy recovery-liquids
	05/07/1998	84250	CAD009452657	413.00 LB	Energy recovery-liquids
	10/01/1998	47948	CAD009452657	413.00 LB	Energy recovery-liquids
	11/06/1998	98634	CAD009452657	413.00 LB	Energy recovery-liquids
Waste Stream:	Chromium hydroxide sludge from treatment of chromic acid waste waters			Source: Wastewater treatment	
Waste Codes:	D007			CAS Codes:	
Form: "Dry" lime or metal hydroxide solids chemically "fixed"					
Reported: 6225.00 LB = 2823.00 KG			Managed Onsite: 0.00 KG		
Shipments:	04/09/1998	98132	ORD089452353	2700.00 LB	Stabilization/chemical fixation using cementitious and /or pozzolanic
	05/05/1998	98213	ORD089452353	500.00 LB	Stabilization/chemical fixation using cementitious and /or pozzolanic
	06/02/1998	98301	ORD089452353	400.00 LB	Stabilization/chemical fixation using cementitious and /or pozzolanic
	07/07/1998	98355	ORD089452353		

				1091.00 LB	Stabilization/chemical fixation using cementitious and /or pozzolanic
	11/03/1998	98577	ORD089452353	1076.00 LB	Stabilization/chemical fixation using cementitious and /or pozzolanic
	12/17/1998	98671	ORD089452353	458.00 LB	Stabilization/chemical fixation using cementitious and /or pozzolanic
Waste Stream:	Partially full aerosol containers with paint, cleaners, adhesives, etc.				Source: Painting
Waste Codes:	D001, D003				CAS Codes:
Form:	Mixed lab packs				
Reported:	85.00 LB = 39.00 KG				Managed Onsite: 0.00 KG
Shipments:	03/05/1998	84026	CAD009452657	25.00 LB	Energy recovery-liquids
	05/07/1998	84250	CAD009452657	60.00 LB	Energy recovery-liquids
Waste Stream:	Debris contaminated with mercury				Source: Other
Waste Codes:	D009				CAS Codes:
Form:	Other waste inorganic solids				
Reported:	2.00 LB = 1.00 KG				Managed Onsite: 0.00 KG
Shipments:	06/30/1998	84341	CAD009452657	2.00 LB	Other aqueous inorganic treatment
Waste Stream:	Polishing rags, debris, and unused wax product				Source: Other cleaning and degreasing
Waste Codes:	D001, F005				CAS Codes:
Form:	Nonhalogenated solvent				
Reported:	9977.00 LB = 4525.00 KG				Managed Onsite: 0.00 KG
Shipments:	02/06/1998	80172	CAD009452657	1142.00 LB	Incineration-solids
	03/05/1998	84026	CAD009452657	1429.00 LB	Incineration-solids
	04/02/1998	84192	CAD009452657	977.00 LB	Incineration-solids
	05/07/1998	84250	CAD009452657	1468.00 LB	Incineration-solids
	06/04/1998	84308	CAD009452657	1042.00 LB	Incineration-solids
	06/30/1998	84341	CAD009452657	1162.00 LB	Incineration-solids
	08/06/1998	47771	CAD009452657	882.00 LB	Incineration-solids
	09/03/1998	47830	CAD009452657	363.00 LB	Incineration-solids
	10/01/1998	47948	CAD009452657	326.00 LB	Incineration-solids
	11/06/1998	98634	CAD009452657	681.00 LB	Incineration-solids
	12/03/1998	98722	CAD009452657	505.00 LB	Incineration-solids
Waste Stream:	DI water with residual mercury				Source: Other cleaning and degreasing
Waste Codes:	D009				CAS Codes:
Form:	Other waste inorganic solids				
Reported:	2.00 LB = 1.00 KG				Managed Onsite: 0.00 KG
Shipments:	06/30/1998	84341	CAD009452657	2.00 LB	Other aqueous inorganic treatment
Waste Stream:	Inert absorbant, equipment, and PPE contaminated with chromic acid and resi				Source: Clothing and personal protective equipment
Waste Codes:	D007				CAS Codes:
Form:	Other waste inorganic solids				

Reported: 50.00 LB = 23.00 KG				Managed Onsite: 0.00 KG	
Shipments:	12/01/1998	98634	ORD089452353	50.00 LB	Landfill
Waste Stream:	Expired off spec product - diesel fuel			Source:	Discarding off-specification material
Waste Codes:	D001			CAS Codes:	
Form:	Other organic liquids				
Reported: 10.00 LB = 5.00 KG				Managed Onsite: 0.00 KG	
Shipments:	06/02/1998	98300	COD980591184	10.00 LB	Incineration-liquids
Waste Stream:	Lab pack, materials contaminated with corrosives			Source:	Cleanup of spill residues
Waste Codes:	D002			CAS Codes:	
Form:	Mixed lab packs				
Reported: 883.00 LB = 400.00 KG				Managed Onsite: 0.00 KG	
Shipments:	04/09/1998	98134	COD980591184	42.00 LB	Incineration-liquids
	04/09/1998	98134	COD980591184	42.00 LB	Incineration-liquids
	04/09/1998	98134	COD980591184	459.00 LB	Incineration-liquids
	07/07/1998	98356	COD980591184	20.00 LB	Incineration-liquids
	07/07/1998	98356	COD980591184	20.00 LB	Incineration-liquids
	08/04/1998	98600	COD980591184	10.00 LB	Incineration-liquids
	12/17/1998	80900	COD980591184	280.00 LB	Incineration-liquids
	06/02/1998	98300	COD980591184	5.00 LB	Incineration-liquids
	06/02/1998	98300	COD980591184	5.00 LB	Incineration-liquids
Waste Stream:	Labpack spill debris and /or containers which may contain residual Mercury			Source:	Cleanup of spill residues
Waste Codes:	D009			CAS Codes:	
Form:	Mixed lab packs				
Reported: 105.00 LB = 48.00 KG				Managed Onsite: 0.00 KG	
Shipments:	11/03/1998	98578	COD980591184	5.00 LB	Incineration-solids
	04/09/1998	98134	COD980591184	100.00 LB	Incineration-liquids
Waste Stream:	Lab pack spent gas purifying tubes containing organometallic polymer and z			Source:	Discontinue use of process equipment
Waste Codes:	D003			CAS Codes:	
Form:	Other lab packs				
Reported: 5.00 LB = 2.00 KG				Managed Onsite: 0.00 KG	
Shipments:	08/04/1998	98600	COD980591184	5.00 LB	Incineration-liquids
Waste Stream:	Lab pack includes resin containing alkylamine, methy ethyl ketone and conta			Source:	Discarding off-specification material
Waste Codes:	D001, D002, D035			CAS Codes:	
Form:	Mixed lab packs				
Reported: 83.00 LB = 38.00 KG				Managed Onsite: 0.00 KG	
Shipments:	04/09/1998	98134	COD980591184	83.00 LB	Incineration-liquids

Waste Stream:	Lab pack includes ethanol, methy ethyl ketones, isopropyl alcohol, and cont			Source:	Discarding off-specification material
Waste Codes:	D001, D035, U154, U159			CAS Codes:	
Form:	Mixed lab packs				
Reported:	42.00 LB = 19.00 KG			Managed Onsite:	0.00 KG
Shipments:	04/09/1998	98134	COD980591184	42.00 LB	Incineration-liquids
Waste Stream:	Lab pack. Includes plastic filters, hydrogen peroxide and contaminated mat			Source:	Discarding off-specification material
Waste Codes:	D001, D002			CAS Codes:	
Form:	Mixed lab packs				
Reported:	167.00 LB = 76.00 KG			Managed Onsite:	0.00 KG
Shipments:	04/09/1998	98134	COD980591184	167.00 LB	Incineration-liquids
Waste Stream:	Lab pack. Includes methylene chloride, potassium chloride, and cobalt nitr			Source:	Laboratory wastes
Waste Codes:	F002			CAS Codes:	
Form:	Mixed lab packs				
Reported:	10.00 LB = 5.00 KG			Managed Onsite:	0.00 KG
Shipments:	11/03/1998	98578	COD980591184	10.00 LB	Retorting
Waste Stream:	Lab pack - ignitable			Source:	Discarding off-specification material
Waste Codes:	D001			CAS Codes:	
Form:	Mixed lab packs				
Reported:	594.00 LB = 269.00 KG			Managed Onsite:	0.00 KG
Shipments:	05/05/1998	50598	COD980591184	125.00 LB	Incineration-liquids
	05/05/1998	50598	COD980591184	459.00 LB	Incineration-liquids
	07/07/1998	98356	COD980591184	10.00 LB	Incineration-liquids
Waste Stream:	RCRA exempt waste water (CAW) comprised of chromic acid and hydrofluoric ac			Source:	Etching
Waste Codes:	D002, D007			CAS Codes:	7664-39-3
Form:	Spent acid with metals				
Reported:	6905.00 GAL = 26131.68 KG			Managed Onsite:	26131.68 KG
Shipments:					
Waste Stream:	RCRA exempt waste waters (CAD) comprised of hydrofluoric acid, hydrochloric			Source:	Etching
Waste Codes:	D002			CAS Codes:	7647-01-0, 7664-39-3, 7697-37-2
Form:	Acidic aqueous waste				
Reported:	96870506.00 GAL = 366602290.25 KG			Managed Onsite:	366602290.25 KG
Shipments:					
Waste Stream:	RCRA exempt waste waters (CCD) comprised of sodium hydroxide and potasium h			Source:	Caustic (alkali) cleaning
	D002			CAS Codes:	

Waste Codes:**Form:** Caustic aqueous waste**Reported:** 902736.00 GAL = 3416366.03 KG**Managed Onsite:** 3416366.03 KG**Shipments:** 1997 SQG 19 298271.73145631 01/06/1998 02/24/1998**Waste Stream:** Alcohol mixture**Source:** Other cleaning and degreasing**Waste Codes:** D001**CAS Codes:****Form:** Nonhalogenated solvent**Reported:** 2891.00 LB = 1311.00 KG**Managed Onsite:** 0.00 KG

Shipments:	05/12/1997	05137	CAD009452657	413.00 LB	Energy recovery-liquids
	07/08/1997	06765	CAD009452657	413.00 LB	Energy recovery-liquids
	03/12/1997	50143	CAD009452657	826.00 LB	Energy recovery-liquids
	09/04/1997	79675	CAD009452657	416.00 LB	Energy recovery-liquids

Waste Stream: Chromium hydroxide sludge from treatment of chromic acid waste water**Source:** Wastewater treatment**Waste Codes:** D007**CAS Codes:****Form:** "Dry" lime or metal hydroxide solids chemically "fixed"**Reported:** 3874.00 LB = 1757.00 KG**Managed Onsite:** 0.00 KG

Shipments:	04/29/1997	97152	ORD089452353	1674.00 LB	Landfill
	06/24/1997	97232	ORD089452353	580.00 LB	Landfill
	10/06/1997	97406	ORD089452353	1620.00 LB	Landfill

Waste Stream: Partially full aerosol containers with paint, cleaners, adhesives, etc.**Source:** Painting**Waste Codes:** D001, D003**CAS Codes:****Form:** Mixed lab packs**Reported:** 30.00 LB = 14.00 KG**Managed Onsite:** 0.00 KG

Shipments:	02/04/1997	52183	CAD009452657	15.00 LB	Incineration-solids
	06/10/1997	11655	CAD009452657	15.00 LB	Incineration-solids

Waste Stream: Debris contaminated with mercury**Source:** Other**Waste Codes:** D009**CAS Codes:****Form:** Other waste inorganic solids**Reported:** 7.00 LB = 3.00 KG**Managed Onsite:** 0.00 KG

Shipments:	07/08/1997	06765	CAD009452657	7.00 LB	Retorting
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Waste Stream: Polishing rags, debris and unused wax product**Source:** Other cleaning and degreasing**Waste Codes:** D001, F005**CAS Codes:****Form:** Nonhalogenated solvent**Reported:** 7435.00 LB = 3372.00 KG**Managed Onsite:** 0.00 KG

Shipments:	01/06/1997	50083	CAD009452657	225.00 LB	Incineration-solids
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	01/27/1997	50145	CAD009452657	225.00 LB	Incineration-solids
	02/04/1997	52183	CAD009452657	225.00 LB	Incineration-solids
	02/25/1997	50146	CAD009452657	225.00 LB	Incineration-solids
	04/17/1997	81638	CAD009452657	437.00 LB	Incineration-solids
	05/12/1997	05137	CAD009452657	233.00 LB	Incineration-solids
	06/10/1997	11655	CAD009452657	690.00 LB	Incineration-solids
	07/08/1997	06765	CAD009452657	468.00 LB	Incineration-solids
	07/24/1997	10732	CAD009452657	216.00 LB	Incineration-solids
	09/04/1997	79675	CAD009452657	685.00 LB	Incineration-solids
	10/01/1997	84880	CAD009452657	646.00 LB	Incineration-solids
Waste Stream:	Discarded product (Clenvex solvent)			Source:	Discarding out-of-date products or chemicals
Waste Codes:	D001			CAS Codes:	
Form:	Halogenated/nonhalogenated solvent mixture				
Reported:	70.00 GAL = 265.00 KG			Managed Onsite:	0.00 KG
Shipments:	09/04/1997	79675	CAD009452657	70.00 GAL	Energy recovery-liquids
Waste Stream:	Lab pack (waste lithium)			Source:	Discarding out-of-date products or chemicals
Waste Codes:	D003			CAS Codes:	
Form:	Lab packs of mixed wastes, chemicals, lab wastes				
Reported:	14.00 LB = 6.00 KG			Managed Onsite:	0.00 KG
Shipments:	08/05/1997	80597	AZD009015389	14.00 LB	Retorting
Waste Stream:	Lab pack(waste lithium)			Source:	Discarding out-of-date products or chemicals
Waste Codes:	D001			CAS Codes:	
Form:	Lab packs of mixed wastes, chemicals, lab wastes				
Reported:	10.00 LB = 5.00 KG			Managed Onsite:	0.00 KG
Shipments:	04/17/1997	41797	AZD009015389	10.00 LB	Incineration-solids
Waste Stream:	Lab pack (waste epoxy paint)			Source:	Discarding out-of-date products or chemicals
Waste Codes:	D001			CAS Codes:	
Form:	Lab packs of mixed wastes, chemicals, lab wastes				
Reported:	80.00 LB = 36.00 KG			Managed Onsite:	0.00 KG
Shipments:	08/05/1997	52284	CAD009452657	80.00 LB	Energy recovery-liquids
Waste Stream:	Lab pack (waste mercury)			Source:	Discarding out-of-date products or chemicals
Waste Codes:	D009			CAS Codes:	
Form:	Lab packs of mixed wastes, chemicals, lab wastes				
Reported:	11.00 LB = 5.00 KG			Managed Onsite:	0.00 KG
Shipments:	08/05/1997	52284	CAD009452657	11.00 LB	Retorting
Waste Stream:	Lab pack (waste butanols)			Source:	Discarding out-of-date products or chemicals

Waste Codes:	D001	CAS Codes:	
Form:	Lab packs of mixed wastes, chemicals, lab wastes		
Reported:	18.00 LB = 8.00 KG	Managed Onsite:	0.00 KG
Shipments:	08/05/1997	52284	CAD009452657 18.00 LB Energy recovery-liquids
Waste Stream:	Lab pack (potassium dichromate)		
Source:	Discarding out-of-date products or chemicals		
Waste Codes:	D001, D007	CAS Codes:	
Form:	Lab packs of mixed wastes, chemicals, lab wastes		
Reported:	14.00 LB = 6.00 KG	Managed Onsite:	0.00 KG
Shipments:	04/17/1997	80403	CAD009452657 14.00 LB Incineration-solids
Waste Stream:	Lab pack (potassium cyanide)		
Source:	Discarding out-of-date products or chemicals		
Waste Codes:	P098	CAS Codes:	
Form:	Lab packs of mixed wastes, chemicals, lab wastes		
Reported:	10.00 LB = 5.00 KG	Managed Onsite:	0.00 KG
Shipments:	04/17/1997	41797	AZD009015389 10.00 LB Incineration-solids
Waste Stream:	Lab pack (freon, trichloroth fluoroethanol)		
Source:	Discarding out-of-date products or chemicals		
Waste Codes:	F002	CAS Codes:	
Form:	Lab packs of mixed wastes, chemicals, lab wastes		
Reported:	25.00 LB = 11.00 KG	Managed Onsite:	0.00 KG
Shipments:	08/05/1997	52284	CAD009452657 25.00 LB Fractionation/distillation
Waste Stream:	Lab pack (ammonium persulfate)		
Source:	Discarding out-of-date products or chemicals		
Waste Codes:	D001	CAS Codes:	
Form:	Lab packs of mixed wastes, chemicals, lab wastes		
Reported:	13.00 LB = 6.00 KG	Managed Onsite:	0.00 KG
Shipments:	04/17/1997	80403	CAD009452657 13.00 LB Incineration-solids
Waste Stream:	Lab pack (acetone)		
Source:	Discarding out-of-date products or chemicals		
Waste Codes:	D001	CAS Codes:	
Form:	Lab packs of mixed wastes, chemicals, lab wastes		
Reported:	25.00 LB = 11.00 KG	Managed Onsite:	0.00 KG
Shipments:	04/17/1997	80403	CAD009452657 25.00 LB Energy recovery-liquids
Waste Stream:	RCRA exempt waste waters comprised of hydrofluoric acid, hydrochloric acid,		
Source:	Etching		
Waste Codes:	D002	CAS Codes:	7647-01-0, 7664-39-3, 7697-37-2
Form:	Acidic aqueous waste		
Reported:	77549279.00 GAL = 293482030.00 KG	Managed Onsite:	293482030.00 KG


Shipments:

Waste Stream:	RCRA exempt wastewater from etching comprised of chromic acid and hydrofluoric acid	Source:	Etching
Waste Codes:	D002, D007	CAS Codes:	7664-39-3
Form:	Spent acid with metals		
Reported:	5592.00 GAL = 21124.65 KG	Managed Onsite:	21124.65 KG

Shipments:

Waste Stream:	RCRA exempt wastewaters comprised of sodium hydroxide and potassium hydroxide	Source:	Caustic (alkali) cleaning
Waste Codes:	D002	CAS Codes:	
Form:	Caustic aqueous waste		
Reported:	1258236.00 GAL = 4761755.80 KG	Managed Onsite:	4761755.80 KG

Shipments:

 1996	SQG	16	215376.6802426	12/30/1996	02/28/1997
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Waste Stream:	Halogenated and nonhalogenated solvent mixture from parts cleaning.			Source: Flush rinsing	
Waste Codes:	D001, D018, F002, F003			CAS Codes:	
Form:	Halogenated/nonhalogenated solvent mixture				
Reported:	120.00 GAL = 359.00 KG			Managed Onsite:	0.00 KG
Shipments:	05/08/1996	005086	CAD009452657	25.00 GAL	Energy recovery-liquids
	06/26/1996	062696	CAD009452657	45.00 GAL	Energy recovery-liquids
	12/03/1996	056176	CAD009452657	35.00 GAL	Energy recovery-liquids
	09/25/1996	018878	ORD981766124	15.00 GAL	Fractionation/distillation

Waste Stream:	Unused product emptied from original container bottoms and some unused prod			Source:	Discarding off-specification material
Waste Codes:	D001, F005, U002, U031			CAS Codes:	
Form:	Nonhalogenated solvent				
Reported:	550.00 GAL = 1646.00 KG			Managed Onsite:	0.00 KG
Shipments:	02/28/1996	073854	CAD009452657	55.00 GAL	Energy recovery-liquids
	06/26/1996	062696	CAD009452657	55.00 GAL	Energy recovery-liquids
	07/24/1996	053737	CAD009452657	55.00 GAL	Energy recovery-liquids
	08/14/1996	092643	CAD009452657	55.00 GAL	Energy recovery-liquids
	09/11/1996	090098	CAD009452657	55.00 GAL	Energy recovery-liquids
	10/17/1996	010166	CAD009452657	55.00 GAL	Energy recovery-liquids
	12/03/1996	056176	CAD009452657	55.00 GAL	Energy recovery-liquids
	03/27/1996	028209	CAD009452657	55.00 GAL	Energy recovery-liquids
	05/22/1996	073801	CAD009452657	110.00 GAL	Energy recovery-liquids

Waste Stream:	Debris contaminated with Mercury from fluorescent light bulbs.			Source:	Other
Waste Codes:	D009			CAS Codes:	
Form:	Other waste inorganic solids				
Reported:	40.00 LB = 18.00 KG			Managed Onsite:	0.00 KG
Shipments:	03/27/1996	028209	CAD009452657	40.00 LB	Retorting

Waste Stream:	Liquid Mercury from laboratory analytical equipment, broken thermometers, a				Source: Laboratory wastes
Waste Codes:	D009, LABP				CAS Codes:
Form:	Other lab packs				
Reported:	10.00 LB = 5.00 KG			Managed Onsite:	0.00 KG
Shipments:	12/05/1996	081574	CAD050806850	10.00 LB	Retorting
Waste Stream:	Partially full containers of unused liquid paint and paint related products				Source: Discarding off-specification material
Waste Codes:	D001, LABP				CAS Codes:
Form:	Mixed lab packs				
Reported:	115.00 GAL = 434.00 KG			Managed Onsite:	0.00 KG
Shipments:	04/18/1996	096057	COD980591184	30.00 GAL	Incineration-liquids
	04/18/1996	096057	COD980591184	55.00 GAL	Incineration-liquids
	04/18/1996	096057	COD980591184	30.00 GAL	Incineration-liquids
Waste Stream:	Partially full aerosol containers with paint, cleaners, and adhesives.				Source: Painting
Waste Codes:	D001, LABP				CAS Codes:
Form:	Mixed lab packs				
Reported:	35.00 LB = 16.00 KG			Managed Onsite:	0.00 KG
Shipments:	11/20/1996	002310	UTD981552177	20.00 LB	Incineration-liquids
	04/18/1996	096057	COD980591184	15.00 LB	Incineration-liquids
Waste Stream:	Waste paint from emptying paint aerosol cans				Source: Discarding off-specification material
Waste Codes:	D001, D035				CAS Codes:
Form:	Organic paint, ink, lacquer, or varnish				
Reported:	55.00 GAL = 208.00 KG			Managed Onsite:	0.00 KG
Shipments:	09/25/1996	090096	CAD009452657	55.00 GAL	Energy recovery-liquids
Waste Stream:	Off-specification wax and isoprpyl alcohol solution.				Source: Discarding off-specification material
Waste Codes:	D001, LABP				CAS Codes:
Form:	Lab packs of mixed wastes, chemicals, lab wastes				
Reported:	5.00 LB = 2.00 KG			Managed Onsite:	0.00 KG
Shipments:	11/20/1996	002310	UTD981552177	5.00 LB	Incineration-liquids
Waste Stream:	Partially full containers of unused chemicals comprised of Trichloro-1,2,2				Source: Discarding out-of-date products or chemicals
Waste Codes:	LABP, U122				CAS Codes:
Form:	Lab packs of mixed wastes, chemicals, lab wastes				
Reported:	5.00 GAL = 19.00 KG			Managed Onsite:	0.00 KG
Shipments:	04/18/1996	096057	COD980591184	5.00 GAL	Incineration-liquids
Waste Stream:	Wipes and debris contaminated with isopropyl alcohol and toluene.				Source: Clothing and personal protective equipment

Waste Codes:	D001			CAS Codes:	
Form:	Nonhalogenated solvent				
Reported:	642.00 LB = 291.00 KG			Managed Onsite:	0.00 KG
Shipments:	08/07/1996	092476	CAD009452657	100.00 LB	Energy recovery-liquids
	10/17/1996	010166	CAD009452657	250.00 LB	Energy recovery-liquids
	12/03/1996	056176	CAD009452657	292.00 LB	Energy recovery-liquids
Waste Stream:	Partially full containers of unused PVC pipe adhesive and primer			Source:	Discarding off-specification material
Waste Codes:	D001, LABP			CAS Codes:	
Form:	Lab packs of mixed wastes, chemicals, lab wastes				
Reported:	170.00 LB = 77.00 KG			Managed Onsite:	0.00 KG
Shipments:	10/15/1996	081487	CAD050806850	160.00 LB	Incineration-liquids
	04/18/1996	096057	COD980591184	10.00 LB	Incineration-solids
Waste Stream:	Inert absorbant, equipment, and clothing contaminated with Chromic Acid and			Source:	Clothing and personal protective equipment
Waste Codes:	D007			CAS Codes:	
Form:	Other waste inorganic solids				
Reported:	1835.00 LB = 832.00 KG			Managed Onsite:	0.00 KG
Shipments:	04/02/1996	060402	ORD089452353	1200.00 LB	Landfill
	06/19/1996	06196	ORD089452353	335.00 LB	Landfill
	10/24/1996	010246	ORD089452353	300.00 LB	Landfill
Waste Stream:	Chromium Hydroxide sludge from treatment of Chromic Acid waste waters.			Source:	Wastewater treatment
Waste Codes:	D007			CAS Codes:	
Form:	"Dry" lime or metal hydroxide solids chemically "fixed"				
Reported:	7936.00 LB = 3599.00 KG			Managed Onsite:	0.00 KG
Shipments:	04/02/1996	060402	ORD089452353	3900.00 LB	Landfill
	06/19/1996	006196	ORD089452353	1513.00 LB	Landfill
	08/21/1996	082196	ORD089452353	958.00 LB	Landfill
	12/31/1996	012316	ORD089452353	1025.00 LB	Landfill
Waste Stream:	RCRA exempt wastewater from etching comprised of Chromic Acid and Hydrofluor			Source:	Etching
Waste Codes:	D002, D007			CAS Codes: 7664-39-3	
Form:	Spent acid with metals				
Reported:	3770.00 GAL = 14241.76 KG			Managed Onsite:	14241.76 KG
Shipments:					
Waste Stream:	RCRA exempt waste waters comprised of Sodium Hydroxide and Potassium Hydrox			Source:	Caustic (alkali) cleaning
Waste Codes:	D002			CAS Codes:	
Form:	Caustic aqueous waste				
Reported:	905100.00 GAL = 3425312.48 KG			Managed Onsite:	3425312.48 KG

Shipments:

Waste Stream:	RCRA exempt waste waters comprised of Hydrofluoric Acid, Hydrochloric Acid,	Source:	Etching
Waste Codes:	D002	CAS Codes:	7647-01-0, 7664-39-3, 7697-37-2
Form:	Acidic aqueous waste		
Reported:	56000000.00 GAL = 211929620.00 KG	Managed Onsite:	211929620.00 KG

Shipments:

1995	LQG	6	5006.0338439	12/27/1995	02/27/1996
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Waste Stream:	Non- RCRA regulated wastewater from etching Hazard due to corrosivity and t	Source:	Etching
Waste Codes:	D002, D007	CAS Codes:	7664-39-3
Form:	Acidic aqueous waste		
Reported:	5810.00 GAL = 21974.52 KG	Managed Onsite:	21974.52 KG

Shipments:

Waste Stream:	Chromium hydroxide sludge from treatment of chromic acid wastewaters Hazard				Source:	Wastewater treatment
Waste Codes:	D007				CAS Codes:	
Form:	"Dry" lime or metal hydroxide solids chemically "fixed"					
Reported:	5376.00 LB = 2444.00 KG				Managed Onsite:	0.00 KG
Shipments:	01/17/1995	95001	ORD089452353	1700.00 LB	Landfill	
	05/04/1995	95007	ORD089452353	2667.00 LB	Landfill	
	08/08/1995	95010	ORD089452353	445.00 LB	Landfill	
	12/20/1995	52212	ORD089452353	1810.00 LB	Landfill	


Waste Stream:	Unused and used product emptied from original containers Hazard due to igni	Source:	Discarding off-specification material
Waste Codes:	D001, U002, U031, U154	CAS Codes:	
Form:	Nonhalogenated solvent		
Reported:	1891.00 LB = 860.00 KG	Managed Onsite:	0.00 KG

Shipments:	01/17/1995	95002	CAD009452657	647.00 LB	Fuel blending
	04/10/1995	95005	CAD009452657	406.00 LB	Fuel blending
	05/08/1995	95006	CAD009452657	300.00 LB	Fuel blending
	07/20/1995	95009	CAD009452657	367.00 LB	Fuel blending
	09/25/1995	95011	CAD009452657	405.00 LB	Fuel blending
	11/20/1995	28092	CAD009452657	413.00 LB	Fuel blending

Waste Stream:	Halogenated/nonhalogenated solvent mixture from parts cleaning Hazard due	Source:	Flush rinsing
Waste Codes:	D001, F002, F003	CAS Codes:	
Form:	Halogenated/nonhalogenated solvent mixture		
Reported:	664.00 LB = 302.00 KG	Managed Onsite:	0.00 KG


Shipments:	06/06/1995	95008	CAD009452657	225.00 LB	Fuel blending
	07/20/1995	95009	CAD009452657	214.00 LB	Fuel blending
	12/20/1995	28092	CAD009452657	225.00 LB	Fuel blending

Source:

Waste Stream: discarded nonhalogenated solvent Hazard due to ignitability comprised of hy		Discarding out-of-date products or chemicals			
Waste Codes:	D001			CAS Codes:	
Form:	Nonhalogenated solvent				
Reported:	110.00 GAL = 334.00 KG			Managed Onsite:	0.00 KG
Shipments:	11/22/1995	28009	CAD009452657	110.00 GAL	Fuel blending
Waste Stream:	Onsite treatment of petroleum contaminated soils using thermal desorption H			Source:	Other remediation
Waste Codes:	D018			CAS Codes:	
Form:	Soil contaminated with organics				
Reported:	5490.76 ST = 4980119.32 KG			Managed Onsite:	4980119.32 KG
Shipments:					
 1994	SQG	7	7.6577685	12/30/1994	03/03/1995
Waste Stream:	Empty containers, personal protective equipment and wipes contaminated with			Source:	Clothing and personal protective equipment
Waste Codes:	D007			CAS Codes:	
Form:	Other waste inorganic solids				
Reported:	146.00 LB = 66.00 KG			Managed Onsite:	0.00 KG
Shipments:	10/25/1994	94012	ORD089452353	121.00 LB	Landfill
Waste Stream:	Flourescent light bulbs, empty containers, personal protective equipment an			Source:	Clothing and personal protective equipment
Waste Codes:	D009			CAS Codes:	
Form:	Other waste inorganic solids				
Reported:	971.00 LB = 441.00 KG			Managed Onsite:	0.00 KG
Shipments:	08/04/1994	9401	ORD980981682	946.00 LB	Retorting
Waste Stream:	Nonhalogenated solvent and oil mixture from parts cleaning. Hazardous due t			Source:	Flush rinsing
Waste Codes:	D001			CAS Codes:	
Form:	Paint thinner or petroleum distillates				
Reported:	448.00 LB = 204.00 KG			Managed Onsite:	0.00 KG
Shipments:	03/10/1994	94003	CAD009452657	222.00 LB	Fuel blending
	08/02/1994	94008	CAD009452657	226.00 LB	Fuel blending
Waste Stream:	Chromium hydroxide sludge from treatment of chromic acid wastewaters. Hazar			Source:	Wastewater treatment
Waste Codes:	D007			CAS Codes:	
Form:	"Dry" lime or metal hydroxide solids chemically "fixed"				
Reported:	6850.00 LB = 3114.00 KG			Managed Onsite:	0.00 KG
Shipments:	02/11/1994	94002	ORD089452353	2266.00 LB	Stabilization/chemical fixation using cementitious and /or pozzolanic
	05/13/1994	94006	ORD089452353	1045.00 LB	Stabilization/chemical fixation using cementitious and /or pozzolanic
	08/04/1994	94009	ORD089452353		


				518.00 LB	Stabilization/chemical fixation using cementitious and /or pozzolanic
	06/07/1994	94010	ORD089452353	1087.00 LB	Stabilization/chemical fixation using cementitious and /or pozzolanic
	10/25/1994	94012	ORD089452353	1218.00 LB	Stabilization/chemical fixation using cementitious and /or pozzolanic
Waste Stream:	Unused and used product emptied from original containers. Hazardous due to				Source: Discarding off-specification material
Waste Codes:	D001, U002, U154				CAS Codes: 71-36-3
Form:	Nonhalogenated solvent				
Reported:	3294.00 LB = 1497.00 KG				Managed Onsite: 0.00 KG
Shipments:	01/19/1994	94001	CAD009452657	737.00 LB	Fuel blending
	03/10/1994	94003	CAD009452657	226.00 LB	Fuel blending
	03/17/1994	94004	CAD009452657	327.00 LB	Fuel blending
	05/10/1994	94005	CAD009452657	773.00 LB	Fuel blending
	08/02/1994	94008	CAD009452657	1019.00 LB	Fuel blending
	10/31/1994	94013	CAD009452657	1015.00 LB	Fuel blending
Waste Stream:	Spent halogenated solvents from facility clean-out. Hazardous due to toxic				Source: Discarding out-of-date products or chemicals
Waste Codes:	F001				CAS Codes:
Form:	Lab packs containing acute hazardous wastes				
Reported:	60.00 LB = 27.00 KG				Managed Onsite: 0.00 KG
Shipments:	05/11/1994	94007	TXD077603371	60.00 LB	Fractionation/distillation
Waste Stream:	Non-RCRA regulated wastewater. Hazardous due to corrosivity and toxicity.				Source: Etching
Waste Codes:	D002, D007				CAS Codes: 7664-39-3
Form:	Acidic aqueous waste				
Reported:	5091.00 LB = 2308.77 KG				Managed Onsite: 2308.77 KG
Shipments:					
1993	SQG	10	24.35799071	12/30/1993	02/28/1994
Waste Stream:	Unused product emptied from original containers. Hazardous due to ignitabi				Source: Discarding off-specification material
Waste Codes:	D001, U001, U031, U154				CAS Codes: 71-36-3
Form:	Nonhalogenated solvent				
Reported:	5452.00 LB = 2478.00 KG				Managed Onsite: 0.00 KG
Shipments:	02/09/1993	93003	CAD009452657	411.00 LB	Fuel blending
	04/04/1993	93004	CAD009452657	1230.00 LB	Fuel blending
	06/11/1993	93006	CAD009452657	1217.00 LB	Fuel blending
	08/11/1993	93007	CAD009452657	1058.00 LB	Fuel blending
	10/29/1993	93009	CAD009452657	1160.00 LB	Fuel blending
Waste Stream:	Empty containers, personal protective equipment, and wipes contaminated wit				Source: Clothing and personal protective equipment
Waste Codes:	D007				CAS Codes:
Form:	Other waste inorganic solids				
Reported:	150.00 LB = 68.00 KG				0.00 KG

Managed Onsite:					
Shipments:	02/05/1993	93002	ORD089452353	104.00 LB	Landfill
	04/19/1993	93005	ORD089452353	135.00 LB	Landfill
Waste Stream:	Vacuum pump oil with halogenated solvent from cleaning filters. Hazardous			Source: Dip rinsing	
Waste Codes:	F002			CAS Codes: 76-13-1	
Form:	Waste oil				
Reported:	457.00 LB = 208.00 KG			Managed Onsite:	0.00 KG
Shipments:	06/11/1993	93006	CAD009452657	457.00 LB	Fuel blending
Waste Stream:	Nonhalogenated solvent and oil mixture from parts degreasing. Hazardous du			Source: Flush rinsing	
Waste Codes:	D001			CAS Codes:	
Form:	Paint thinner or petroleum distillates				
Reported:	222.00 LB = 101.00 KG			Managed Onsite:	0.00 KG
Shipments:	04/04/1993	93004	CAD009452657	192.00 LB	Fuel blending
Waste Stream:	Miscellaneous unused and out-of-date/off-spec chemicals from facility clean			Source: Discarding off-specification material	
Waste Codes:	LABP			CAS Codes:	
Form:	Lab packs containing acute hazardous wastes				
Reported:	1.00 LB = 0.45 KG			Managed Onsite:	0.00 KG
Shipments:	01/13/1993	93034	ILD098642424	60.00 LB	Incineration-gases
Waste Stream:	Spent halogenated solvents from facility clean-out. Hazardous due to toxic			Source: Discarding out-of-date products or chemicals	
Waste Codes:	F002			CAS Codes: 76-13-1	
Form:	Halogenated/nonhalogenated solvent mixture				
Reported:	109.00 LB = 50.00 KG			Managed Onsite:	0.00 KG
Shipments:	02/09/1993	93003	CAD009452657	93.00 LB	Incineration-liquids
Waste Stream:	Solvents from painting operations. Hazardous due to ignitability. Compris			Source: Painting	
Waste Codes:	D001			CAS Codes:	
Form:	Paint thinner or petroleum distillates				
Reported:	20.00 LB = 9.00 KG			Managed Onsite:	0.00 KG
Shipments:					
Waste Stream:	Fluorescent light bulbs, empty containers, personal protective equipment, a			Source: Clothing and personal protective equipment	
Waste Codes:	D009			CAS Codes:	
Form:	Other waste inorganic solids				
Reported:	150.00 LB = 68.00 KG			Managed Onsite:	0.00 KG
Shipments:					

Waste Stream: Non-RCRA regulated wastewater. Hazardous due to corrosivity and toxicity.				Source: Etching	
Waste Codes: D002, D007				CAS Codes: 7664-39-3	
Form: Acidic aqueous waste					
Reported: 5259.00 GAL = 19890.54 KG				Managed Onsite: 19890.54 KG	
Shipments:					
Waste Stream: Chromium hydroxide sludge from treatment of chromic acid wastewaters. Hazar				Source: Wastewater treatment	
Waste Codes: D007				CAS Codes:	
Form: "Dry" lime or metal hydroxide solids chemically "fixed"					
Reported: 3266.00 LB = 1485.00 KG				Managed Onsite: 0.00 KG	
Shipments:	02/05/1993	93002	ORD089452353	873.00 LB	Stabilization/chemical fixation using cementitious and /or pozzolanic
	04/19/1993	93005	ORD089452353	795.00 LB	Stabilization/chemical fixation using cementitious and /or pozzolanic
	08/20/1993	93008	ORD089452353	1518.00 LB	Stabilization/chemical fixation using cementitious and /or pozzolanic
	1992	LQG	11	30.52744485	12/29/1992 02/26/1993
Waste Stream: Unused product emptied from original containers. Hazard is toxic & ignitabl				Source: Discarding off-specification material	
Waste Codes: D001, U002, U031, U154				CAS Codes: 71-36-3	
Form: Nonhalogenated solvent					
Reported: 2913.00 LB = 1324.00 KG				Managed Onsite: 0.00 KG	
Shipments:	02/04/1992	92001	CAD009452657	1236.00 LB	Fuel blending
	04/14/1992	92003	CAD009452657	720.00 LB	Fuel blending
	06/04/1992	92005	CAD009452657	279.00 LB	Fuel blending
	08/11/1992	92007	CAD009452657	267.00 LB	Fuel blending
	12/15/1992	92010	CAD009452657	805.00 LB	Fuel blending
Waste Stream: Chromic acid wastewater fro etching. Hazardous due to corrosivity & toxicit				Source: Etching	
Waste Codes: D002, D007				CAS Codes: 7664-39-3	
Form: Acidic aqueous waste					
Reported: 6365.00 GAL = 24073.64 KG				Managed Onsite: 24073.64 KG	
Shipments:					
Waste Stream: Chromium hydroxide sludge from treatment of chromic acid wastwaters Hazardo				Source: Wastewater treatment	
Waste Codes: D007				CAS Codes:	
Form: "Dry" lime or metal hydroxide solids chemically "fixed"					
Reported: 4644.00 LB = 2111.00 KG				Managed Onsite: 0.00 KG	
Shipments:	02/10/1992	92002	ORD089452353	1682.00 LB	Stabilization/chemical fixation using cementitious and /or pozzolanic
	05/26/1992	92004	ORD089452353	1273.00 LB	Stabilization/chemical fixation using cementitious and /or pozzolanic
	07/20/1992	92006	ORD089452353	585.00 LB	Stabilization/chemical fixation using cementitious and /or pozzolanic
	12/09/1992	92009	ORD089452353		

1848.00 LB Stabilization/chemical fixation using cementitious and /or pozzolanic

Waste Stream:	Empty containers, personal protective equipment and wipes contaminated with				Source:	Clothing and personal protective equipment
Waste Codes:	D007				CAS Codes:	
Form:	Other waste inorganic solids					
Reported:	246.00 LB = 112.00 KG				Managed Onsite:	0.00 KG
Shipments:	07/20/1992	92006	ORD089452353	142.00 LB	Landfill	
Waste Stream:	Stillbottoms from recycling of halogenated solvent Hazard is toxicity compr				Source:	Solvents recovery
Waste Codes:	F002				CAS Codes:	76-13-1
Form:	Still bottoms of halogenated solvents or other organic liquids					
Reported:	3480.00 LB = 1582.00 KG				Managed Onsite:	0.00 KG
Shipments:	02/04/1992	92001	CAD009452657	3460.00 LB	Fractionation/distillation	
	04/14/1992	92003	CAD009452657	745.00 LB	Fractionation/distillation	
	06/09/1992	92005	CAD009452657	509.00 LB	Fractionation/distillation	
	08/11/1992	92007	CAD009452657	680.00 LB	Fractionation/distillation	
	10/13/1992	92008	CAD009452657	402.00 LB	Fractionation/distillation	
Waste Stream:	Nonhalogenated solvent and oil mixture from parts degreasing Hazardous due				Source:	Flush rinsing
Waste Codes:	D001				CAS Codes:	
Form:	Paint thinner or petroleum distillates					
Reported:	574.00 LB = 261.00 KG				Managed Onsite:	0.00 KG
Shipments:	04/14/1992	92003	CAD009452657	418.00 LB	Fuel blending	
	10/13/1992	92008	CAD009452657	156.00 LB	Fuel blending	
Waste Stream:	Vacuum pump oil with halogenated solvent from cleaning filters Hazardous due				Source:	Dip rinsing
Waste Codes:	F002				CAS Codes:	76-13-1
Form:	Waste oil					
Reported:	1369.00 LB = 622.00 KG				Managed Onsite:	0.00 KG
Shipments:	02/04/1992	92001	CAD009452657	550.00 LB	Fuel blending	
	06/09/1992	92005	CAD009452657	905.00 LB	Fuel blending	
	12/15/1992	92010	CAD009452657	464.00 LB	Fuel blending	
Waste Stream:	Solvent based paint from storage clean-out Hazardous due to ignitability co				Source:	Painting
Waste Codes:	D001				CAS Codes:	
Form:	Organic paint, ink, lacquer, or varnish					
Reported:	107.00 LB = 49.00 KG				Managed Onsite:	0.00 KG
Shipments:	11/27/1992	92008	ORD980981682	107.00 LB	Transfer facility storage; shipped off-site without on-site TDR activity	
Waste Stream:	Used printed circuit boards from disassembly of electronic equipment Hazard				Source:	Other
	D008				CAS Codes:	

Waste Codes:					
Form: Other waste inorganic solids					
Reported: 108.00 LB = 49.00 KG				Managed Onsite: 0.00 KG	
Shipments:	12/02/1992	92301	ORD089452353	108.00 LB	Landfill
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Waste Stream:	Misc unused and out of date /off spec chemicals from facility clean-out			Source: Discarding off-specification material	
Waste Codes:	LABP			CAS Codes: 76-13-1, 7647-01-0, 7697-37-2	
Form: Lab packs of mixed wastes, chemicals, lab wastes					
Reported: 484.00 LB = 220.00 KG				Managed Onsite: 0.00 KG	
Shipments:	12/10/1992	92601	ORD980981682	484.00 LB	Transfer facility storage; shipped off-site without on-site TDR activity
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Waste Stream:	Misc surplus chemicals from facility clean out Hazardous due to ignitabili			Source: Discarding out-of-date products or chemicals	
Waste Codes:	D001, D002, U134			CAS Codes: 7647-01-0, 7664-39-3, 7697-37-2	
Form: Acidic aqueous waste					
Reported: 273.00 LB = 123.81 KG				Managed Onsite: 119.72 KG	
Shipments:					
	1991	LQG	9	39.124	11/01/1991 03/11/1992
Waste Stream:	SPENT HALOGENATED SOLVENT FROM CLEANING SILICON WAFERS PACKAGES AND PROBES.			Source: Dip rinsing	
Waste Codes:	F002			CAS Codes: 76-13-1	
Form: Halogenated/nonhalogenated solvent mixture					
Reported: 20771.00 LB = 9441.00 KG				Managed Onsite: 0.00 KG	
Shipments:	01/15/1991	91001	CAD009452657	2770.00 LB	Fractionation/distillation
	03/12/1991	91002	CAD009452657	4847.00 LB	Fractionation/distillation
	06/04/1991	91004	CAD009452657	9002.00 LB	Fractionation/distillation
	08/21/1991	91006	CAD009452657	4152.00 LB	Fractionation/distillation
<hr/>					
Waste Stream:	STILL BOTTOMS FROM IN-PROCESS RECYCLING OF FREON. HAZARDOUS DUE TO TOXICITY			Source: Solvents recovery	
Waste Codes:	F002			CAS Codes: 67-64-1, 71-36-3, 76-13-1	
Form: Still bottoms of halogenated solvents or other organic liquids					
Reported: 11076.00 LB = 5035.00 KG				Managed Onsite: 0.00 KG	
Shipments:	01/15/1991	91001	CAD009452657	5540.00 LB	Fractionation/distillation
	08/21/1991	91006	CAD009452657	692.00 LB	Fractionation/distillation
	09/11/1991	91007	CAD009452657	692.00 LB	Fractionation/distillation
	10/25/1991	91010	CAD009452657	1384.00 LB	Fractionation/distillation
<hr/>					
Waste Stream:	SPENT HALOGENATED SOLVENT FROM CLEANING SILICON WAFER CASSETTES. HAZARDOUS			Source: Dip rinsing	
Waste Codes:	F002			CAS Codes: 75-09-2, 76-13-1	
Form: Halogenated solvent					
Reported: 14327.00 LB = 6512.00 KG				0.00 KG	

Managed Onsite:					
Shipments:	01/15/1991	91001	CAD009452657	2605.00 LB	Incineration-liquids
	03/12/1991	91002	CAD009452657	3907.00 LB	Incineration-liquids
	06/04/1991	91006	CAD009452657	4558.00 LB	Incineration-liquids
	08/21/1991	91006	CAD009452657	1954.00 LB	Incineration-liquids
	10/25/1991	91010	CAD009452657	1303.00 LB	Incineration-liquids
Waste Stream:	STEAM STRIPPER BOTTOMS FROM COLLECTION OF LEAKED OR SPILLED ORGANICS, SOLVE			Source: Leak collection	
Waste Codes:	F002, U080, U154			CAS Codes: 76-13-1	
Form:	Other organic sludges				
Reported:	458.00 LB = 208.00 KG			Managed Onsite:	0.00 KG
Shipments:	09/11/1991	91007	CAD009452657	458.00 LB	Fuel blending
Waste Stream:	OIL MIXTURE CONTAINING SPENT SOLVENT FROM DEGREASING METAL PARTS. HAZARDOUS			Source: Spray rinsing	
Waste Codes:	D001			CAS Codes:	
Form:	Paint thinner or petroleum distillates				
Reported:	550.00 LB = 250.00 KG			Managed Onsite:	0.00 KG
Shipments:	03/12/1991	91002	CAD009452657	550.00 LB	Fuel blending
Waste Stream:	UNUSED AND OFF-SPEC MATERIAL COLLECTED FROM THE ORIGINAL CONTAINERS. HAZARD			Source: Discarding off-specification material	
Waste Codes:	D001, U002, U031, U154			CAS Codes: 67-64-1, 71-36-3, 76-13-1	
Form:	Other organic liquids				
Reported:	1236.00 LB = 562.00 KG			Managed Onsite:	0.00 KG
Shipments:	09/11/1991	91007	CAD009452657	412.00 LB	Fuel blending
Waste Stream:	CHROMIUM HYDROXIDE SLUDGE FROM TREATMENT OF CHROMIC ACID WASTE. HAZARDOUS D			Source: Etching	
Waste Codes:	D007			CAS Codes:	
Form:	"Dry" lime or metal hydroxide solids chemically "fixed"				
Reported:	6156.00 LB = 2798.00 KG			Managed Onsite:	0.00 KG
Shipments:	03/18/1991	91003	ORD089452353	1659.00 LB	Stabilization/chemical fixation using cementitious and /or pozzolanic
	07/12/1991	91005	ORD089452353	2732.00 LB	Stabilization/chemical fixation using cementitious and /or pozzolanic
	10/24/1991	91009	ORD089452353	598.00 LB	Stabilization/chemical fixation using cementitious and /or pozzolanic
Waste Stream:	EXCAVATION DEBRIS FROM INSTALLATION OF SUMP FOUNDATION. HAZARDOUS DUE TO TO			Source: Other remediation	
Waste Codes:	D018			CAS Codes:	
Form:	Soil contaminated with organics				
Reported:	18300.00 LB = 8318.00 KG			Managed Onsite:	0.00 KG

Shipments:	10/10/1991	91008	ORD089452353	18300.00 LB	Landfill
Waste Stream:	SPENT OIL CONTAINING HALOGENATED SOLVENT FROM CLEANING FILTERS. HAZARDOUS D			Source: Dip rinsing	
Waste Codes:	F002			CAS Codes: 76-13-1	
Form:	Halogenated/nonhalogenated solvent mixture				
Reported:	13200.00 LB = 6000.00 KG			Managed Onsite:	0.00 KG
Shipments:	03/12/1991	91002	CAD009452657	6600.00 LB	Fuel blending
	06/04/1991	91004	CAD009452657	3850.00 LB	Fuel blending
	08/21/1991	91006	CAD009452657	1100.00 LB	Fuel blending
	10/25/1991	91010	CAD009452657	1100.00 LB	Fuel blending

ATTACHMENT 08

02/11/2000 11:06 FAX 503 721 2516

NW NATURAL

003



Oregon

John A. Kitzhaber, M.D., Governor

Department of Environmental Quality

Northwest Region
2020 SW Fourth Avenue
Suite 400
Portland, OR 97201-4987
(503) 229-5263 Voice
TTY (503) 229-5471

February 9, 2000

Ms. Sandra Hart
Senior Engineer
Northwest Natural Gas Company
220 N.W. Second Avenue
Portland, OR 97209

Re: Interim Remedial Action Plan - Former GASCO
Facility

Dear Sandi:

The Oregon Department of Environmental Quality (DEQ) has reviewed the revised Interim Remedial Action Plan for the recovery of dense non-aqueous phase liquid (DNAPL). This proposal was submitted on your behalf by Rob Ede of Hahn and Associates on January 25, 2000. Although the revised plan addresses the majority of DEQ comments as outlined in my letter dated December 21, 1999, DEQ does not believe the objectives specified in the plan are sufficient to demonstrate that the proposed action is necessary to prevent, minimize or mitigate damage to the public health, safety and welfare or the environment according to DEQ removal requirements specified in OAR 340-122-070.

Based on discussions with Rob Ede, it is our understanding that the one goal of the proposed interim action is to minimize potential risks to human health and the environment through the removal of DNAPL from the environment. This action will minimize the potential for DNAPL migration and continued dissolution of DNAPL to groundwater. In addition, DEQ understands that the proposed system was selected based on its ability to achieve this goal considering cost reasonableness and implementability of the proposed system. As a result, DEQ approves the Interim Remedial Action Plan.

Prior to start-up of the system, DEQ requests that a performance monitoring plan be submitted for approval. This plan should include performance evaluation criteria and a schedule for documenting system performance. The evaluation should assess the need for system modifications to optimize DNAPL recovery.



Ms. Sandra Hart
February 9, 2000
Page 2

Please notify us once a schedule for implementation of the DNAPL recovery system has been finalized. If you have any questions regarding our approval of the Interim Remedial Action Plan, please contact me at 229-5648.

Sincerely,



Eric L. Blischke
Project Manager
Voluntary Cleanup and Portland Harbor Section

cc: Mike Rosen, NWR/DEQ
Rod Struck, NWR/DEQ
Bruce Stirling, NWR/DEQ

HAHN AND ASSOCIATES, INC.
ENVIRONMENTAL MANAGEMENT

January 25, 2000

Mr. Eric Blischke
Oregon Department of Environmental Quality
Voluntary Cleanup and Site Assessment Section
811 SW 6th Avenue
Portland, Oregon 97204

HAI Project No. 2708

SUBJECT: Revised Interim Remedial Action Plan: Dense Non-Aqueous Phase Liquid
Recovery; Northwest Natural-Gasco Facility, 7900 NW St. Helens Road,
Portland, Oregon

Dear Mr. Blischke:

As provided in the First Quarter 1999 Remedial Investigation (RI) Progress Report¹ for the above-referenced site (Figure 1), results of pilot test activities regarding the removal of dense non-aqueous liquid (DNAPL) from three monitoring wells at the Gasco site have indicated that prolonged full scale DNAPL recovery from one of the three well locations (MW-6-32) does appear viable. Based on the preceding, Hahn and Associates, Inc., (HAI), at the request of Northwest Natural, has prepared this plan describing the proposed design and implementation of full scale DNAPL recovery from the MW-6-32 well location. As requested by the Oregon Department of Environmental Quality (DEQ), this work plan has been revised to incorporate comments dated December 21, 1999 (Blischke to Hart), generated as a result of DEQ's review of the November 19, 1999 version of this work plan.

1. BACKGROUND

DNAPL, composed of oil tars, has been observed at the base of three wells at the Gasco site (MW-6-32, MW-10-25, MW-11-32) with typical overall thicknesses ranging from approximately 8 to 10 feet at MW-6-36 and from 0 to 2 feet at MW-10-25 and MW-11-32. As reported by HAI (1999), Northwest Natural conducted pilot scale pumping activities between the dates of December 14, 1998 and January 19, 1999 in order to evaluate the recoverability of DNAPL at each of the three well locations. Well locations are depicted on the site map provided as Figure 2.

The referenced pilot study activities, consisting of DNAPL extraction utilizing a peristaltic pump over a course of 12 events, resulted in the removal of approximately 22 gallons of DNAPL from well MW-6-32; approximately 0.25 gallons from well MW-10-25; and approximately 0.7 gallons from well MW-11-32.

¹ Hahn and Associates, Inc., 1999, *First Quarter 1999 Progress Report For Remedial Investigation / Feasibility Study (RI/FS)*, Northwest Natural - Gasco Facility, 7900 NW St. Helens Road, Portland, Oregon, June 3, 1999.

The pilot study activities found no decline in overall recoverable DNAPL volume through time within well MW-6-32, indicating the potential viability of prolonged full scale DNAPL recovery from this well. Conversely, little to no DNAPL recovery was noted at wells MW-10-25 and MW-11-32 subsequent to the initial removal of product, thereby indicating that the implementation of full scale product recovery at these locations would not be feasible.

DNAPL recovery at the MW-6 location appears to be optimized by the nature of the silt unit in the area of the well. The silt unit, which acts as a barrier to the vertical movement of the DNAPL, appears to be depressed in the vicinity of MW-6, thereby allowing DNAPL to "drain" into this well. Also, characterization activities indicated the DNAPL within MW-6-26 to be less viscous than the DNAPL identified within wells MW-10-25 and MW-11-32. The higher DNAPL viscosities at the MW-10-25 and MW-11-32 locations would inhibit the DNAPL mobility, thereby reducing the influx of the DNAPL into each of these wells.

2. INTERIM REMEDIAL ACTION OBJECTIVES

Because no known imminent threat to human health or the environment relating to DNAPL at the site has been identified to date, since continuing migration of DNAPL has not been identified, and since risk assessment activities at the site have not yet been completed, the ultimate need for the incorporation of free product recovery activities into a final remedy for the site has not as of yet been ascertained. As such, remedial action objectives for DNAPL recovery with respect to the final remedy for the site can not yet be stated.

However, because it has been demonstrated that free product exists at the MW-6-32 location with the potential to be recovered via readily available and relatively inexpensive off-the-shelf technology, it is proposed herein that product recovery be implemented at this time, at this location, as an interim remedial action. The objectives of this interim remedial action are as follows:

- To initiate the removal of the most readily-recoverable identified free product from the site at this time.
- To allow for the collection of information necessary for an evaluation of the viability of long-term conventional free product recovery at the site. This information may be used in a feasibility study to assist in the development of a final remedial design for the site, should it ultimately be determined that free product recovery is necessary in order to effectively meet regulatory or yet to be determined risk-based cleanup objectives for the site.

Based on the above interim remedial action objectives, and with the DNAPL recovery system proposed (Section 3), mass removal of the primary site contaminants (benzene and polynuclear aromatic hydrocarbons) will commence in a manner that should maximize the removal of free product while minimizing the removal of groundwater. No exacerbation of contamination (free product or dissolved) at the site due to system operation is predicted due to the low flow and cyclical nature of the proposed product recovery. With the implementation of this interim remedial action, product volume recovery data, with

knowledge of DNAPL distribution in the MW-6 vicinity, should allow for estimates of the potential capture zone for the recovery well. Overall performance data collected during operation of the proposed system will allow for an assessment of the feasibility of this cleanup technique for viable long-term recovery, should such recovery ultimately be a component of overall site cleanup objectives.

3. PROPOSED DNAPL RECOVERY SYSTEM

The proposed product recovery system for well MW-6-32, as diagrammed on Figure 3, includes the placement of a 1.79-inch diameter pneumatic pump within the well at a depth above the DNAPL surface. Polyethylene tubing, connected to the bottom of the pump, would then be placed such that it extends into the DNAPL, to a location near the base of the well. The DNAPL would then be pumped, via a strong vacuum, through the product discharge tubing line, to the surface where it will be discharged into an above-ground storage tank.

The use of a 300-gallon double-walled steel storage tank, with 100% secondary containment capacity, is proposed for product containment. According to manufacturer's specifications, the steel of the tank conforms to American Society for Testing and Materials (ASTM) A36 (Standard Specification for Carbon Structural Steel). A comparison of the chemical properties of the DNAPL to be recovered and the tank materials indicates that the DNAPL is chemically compatible with the materials of the proposed tank. As further described in Section 5, the tank will be labeled to indicate that it contains "Discarded Fuel Product for Reclamation". Product will be removed from the tank by opening a 4-inch pump/dispenser port on the top of the tank, lowering in a stinger, and suctioning out the tank contents directly into a tanker truck for delivery to the re-refiner (Section 5).

In addition to secondary containment for the product storage tank, all product piping located outside of well MW-6-32 will be insulated to prevent freezing, and will be placed within a larger diameter pipe in order to provide 100% secondary containment. According to the City of Portland, electric, plumbing, and structural permits are not necessary for installation and operation of the proposed system. The tank and all piping will comply with Uniform Fire Code requirements. Additionally, all product piping will be pressure tested for leaks prior to incorporation into the remedial system.

As diagrammed in Figure 3, the system will be operated by a 12-volt battery and compressed air. The battery will be automatically recharged with a solar panel, or if necessary, it will be manually recharged. The compressed air will be provided in cylinders that will require periodic change-outs to maintain the air supply.

The proposed pump, the Xitech ADJ 201, was specifically designed for use at sites where high viscosity DNAPLs such as oil tar or coal tar require recovery. This pump applies a vacuum at the inlet of the pump to withdraw the product from the well, and is designed to provide intermittent low flow removal of DNAPL. As the specifications indicate (Appendix A), this unit can be controlled to pump at any selected rate between a minimum of 0.1 gallons per hour (gph) and a maximum of 13 gph. The pump is intrinsically safe and is chemically resistant to the product being recovered.

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It is proposed that the recovery system be operated by an electronic timer that will control the removal of DNAPL at the MW-6-32 location. Specifically, the proposed timer, the Xitech 2500 ES, will provide for individual pumping cycles of 5, 10, 20, 30, or 60 minutes duration, for one of the following number of cycles per day: 1, 3, 6, 12, 24, or 48. The timer will also provide a visual display indicating the level of product within the storage tank, and it will keep record of elapsed pumping time. The timer will also include an automatic shut-off feature to prevent accidental overfilling of the storage tank.

As indicated above, it will be possible to modify flow rate, length of a pumping cycle, and frequency of cycles, as necessary, such that DNAPL recovery at the MW-6-32 location can be optimized, and the withdrawal of water can be minimized.

Initially, various combinations of flow rates, cycle duration, and length of time between cycles will be tested in an effort to determine the optimum pump and timer settings to maximize the overall rate of DNAPL recovery, while minimizing the amount of water that is recovered. At a minimum, based on pilot testing completed at the MW-6-32 location, it is known that removal of at least 1 to 2 gallons of DNAPL per day should be feasible, assuming a 1-cycle per day pumping frequency.

Due to the presence of vehicular traffic in the vicinity of well MW-6-32, it is proposed that the above-ground portion of the system be enclosed and secured with fencing, and that protective guard posts, similar to those surrounding existing above-grade monitoring wells at the site, be placed around the fenced area.

4. SYSTEM OPERATION AND MAINTENANCE AND REPORTING

System performance and operation will be evaluated daily for the first week after start-up, and at least weekly thereafter for the first month of operation. Based on system performance as observed during the first month of DNAPL recovery, an Operation and Maintenance (O&M) schedule will be developed such that battery recharging and air cylinder replacement may be conducted, and such that the volume of recovered liquids can be recorded.

With regard to reporting, results of DNAPL recovery at MW-6-36 will be provided within the routine Quarterly RI Progress Reports that are currently submitted to DEQ within 30 days following the end of each Quarter. To be included within each report will be an identification of the current system control settings (pump rate, cycle duration and frequency); system operation time since last report; to date cumulative system operation time; DNAPL recovered since last report; to date cumulative DNAPL recovered; as well as an identification of system O&M schedule and a description of any O&M issues.

5. PROPOSED DNAPL MANAGEMENT

It is proposed that recovered DNAPL be managed as per DEQ Policy Number 96-002, Petroleum Contaminated Wastewater Management (Appendix B). As per the referenced guidance, petroleum contaminated wastewaters generated as result of fuel management activities may be managed as commercial chemical product, provided the mixture only

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contains unused fuel and water, and the fuel portion is legitimately reclaimed and used as commercial fuel.

As per the guidance, petroleum contaminated wastewaters include water/fuel mixtures that are generated as a result of fuel product spills. Characterization of the DNAPL (HAI, 1999) indicates it to be inherently fuel-like, and re-refiners have been identified that will process the recovered DNAPL/water mixture for commercial sale as bunker / marine fuel. Based on the preceding, the DNAPL at Gasco does meet the requirements of the DEQ Policy Number 96-002, and in compliance with this standard, the recovered DNAPL will be neither a RCRA solid waste or hazardous waste, assuming re-refinement of the material does occur. However, as per a Hazardous Waste Characterization Worksheet completed for the DNAPL (Appendix C), if re-refinement of the DNAPL does not occur, then once recovered, the DNAPL would be a characteristic RCRA hazardous waste due to benzene concentrations (RCRA Waste Code D018).


In support of the above, Mr. Kevin Masterson with the Pollution Prevention and Hazardous Waste Technical Assistance Program at the Oregon Department of Environmental Quality (DEQ) Northwest Region, during a telephone conversation on February 19, 1999 (Ede to Masterson), indicated that management of the recovered DNAPL as petroleum contaminated wastewater per DEQ policy Number 96-002 appears appropriate and acceptable. Notes documenting the February 19, 1999 telephone conversation with Mr. Masterson are included within Appendix B.

6. PROPOSED INSTALLATION AND START-UP SCHEDULE

It is proposed that the system be installed and operational within 3 months of receipt of DEQ-approval of this interim remedial action plan.

If there are any comments or questions, please contact the undersigned.

Sincerely,



Robert Ede
Sr. Project Manager

c: Ms. Sandra Hart, Northwest Natural
Mr. Richard Bach, Stoel Rives LLP (2)
Mr. Frank Selker, Decision Management Associates, LLC
Mr. Tom Schadt, Anchor Environmental, LLC

HAHN AND ASSOCIATES, INC.

ATTACHMENT 09

19 JUNE 1978

~~B-5-8~~

B-5-A-8

DEPTH BLOW REMARKS

STARTED HOLE @ 0830

14' VERY THIN GRAVEL LAYER

25 SS-1 9-10-11 GRAY SAND SP. OIL SOAKED
STRONG OIL SMELL

30 4-5-4 NO RECOVERY - ROCK -

35-37' ST-1

37-38.5 SS-3 2-1-3 SILT → 38.5 BLUE GRAY PLASTIC
SAND → 38.5 SILT

40-41.5 SS-4 1-1-2 BLUE GRAY PLASTIC SILT

45-46.5 SS-5 1-2-3 BLUE GRAY PLASTIC SILT
46.5 - SAND -

50-51.5 SS-6 1-3-3 PLASTIC SILT

55-57 SS-7 56 ST-2 OIL SOAKED SAND - STRONG ODOR

58-59.5 SS-7 3-3-3 @ 58.5 SAND LAYER
TR 57

RGST SILT BLUE GRAY - PLASTIC

Wacker
11054, CI.

19 JUNE 1978

~~B-5-8~~

B-5A-8

DEPTH BLOW REMARKS

60-61.5 2-2-3 SS-8 PLASTIC VERY SLIGHT
LAYER OF SAND RIGHT @ 60 SILT ODOR

65-66.5 SS-9 2-2-4 PLASTIC SILT W/ORGANIC DEBRIS

70-71.5 SS-10 6-9-9 ALL SAND 30% RECOV.
ODOR
ALL SILT ABOVE THIS DEPTH IS
(SOFT)

75-77 ST-3 55-11 SAND - ODOR DIL NOT (VISIBLE)
ONLY ODOR OBVIOUS

80-81.5 SS-12 13-22-28 SAND - ODOR GRAY - GREENISH

85-86.5 SS-13 12-21-20 SAND - ODOR

90-91.5 SS-14 6-11-17 SILT LAYERS ENCOUNTERED THEN
LAST 10" (THIN LAYERS)
SAND - ODOR -

100-101.5 SS-15 8-5-6 SAND

BOTTOMED HOLE @ 1500 PM.

20 JUNE 1978
HEAD QUARTERS BUILDING
B-HQ-8

DEPTH	BLOW CT	REMARKS
0		BLuish GRAY SANDY SILT
10		GREENISH GRAY PLASTIC SILT
20		NO OIL VISIBLE - OIL ODOR THEREA
25-27	ST-1	GREEN-GRAY/BROWN PLASTIC SILT
	SS-1	OIL - COLOR FLEW
27-28.5	2-1-1	GRAY-MOTTLED BROWN PLASTIC SILT
	SS-2	
30-31.5	1-1-1	GRAY-BROWN MOTTLED PLASTIC SILT
	SS-3	PLASTIC SILT
35-36.5	1-3-3	@ 36 MATERIAL CHANGED TO SOLID GRAY COLOR
	SS-4	
40-41.5	2-3-3	BROWN SILT - SOME GRAY MOTTLING
	SS-5	
45-46.5	2-4-6	BROWN F SANDY SILT (WET)
	SS-6	
50-51.5	3-6-8	BROWN SILT @ 51 FT. BROWN SILTY SAND
		BOTTOMED HOLE @ 0910 AND 51.5 FT.

20 JUNE 1978
~~HEAD QUARTERS BUILDING~~
SUBSTATION BORE HOLE
B-SUB-8

DEPTH	BLOW CT	REMARKS
10-11.5	SS-1 3-5-4	GRAY SILTY SAND FILL
13		OIL IN WATER DRILLING VERY SOFT / RED BRICK CUT DISCHARGE
15-16.5	SS-2 2-7-3	FILL MAT / DEBRIS MULTICOLORED VERY STRONG ODOR
		DISCHARGE WATER - FULL OF DEBRIS
20-21.5		NO SS TAKEN DUE TO GARBAGE
		DRILLING SMOOTH
25-26.5	SS-3 1-4-11	0% RECOVERY
		OIL STILL IN MAT
30-31.5	SS-4 2-2-3	GRAY SILT / PLASTIC
		ST. CONSIDERABLE AMOUNT OF OIL IN SAMPLE @ 31 FT.
35-36.5	SS-5 2-2-2	GRAY F SANDY SILT
		WET
37'		SILT
40-42	ST-1	PLASTIC SILT
42-43.5	SS-6 1-2-2	GRAY SILT - W/OIL - ODOR
		BOTTOMED HOLE @ 43.5'

43.5
51.5
95' G

20 JUNE 1978
HEAD QUARTERS BUILDING
B-HQ-8

DEPTH	BLOW CT.	REMARKS
0		BLuish GRAY SANDY SILT
10	10	GREENISH GRAY PLASTIC SILT
	20	MUCH OIL VISIBLE - OIL ODOR THOUGH
25-27	ST-1	GREEN-GRAY/BROWN PLASTIC SILT
	SS-1	OIL - COLOR INFLUENCED
27-28.5	2-1-1	GRAY-MOTTLED BROWN PLASTIC SILT
	SS-2	
30-31.5	1-1-1	GRAY-BROWN MOTTLED PLASTIC SILT
	SS-3	PLASTIC SILT
35-36.5	1-3-3	@ 36 MATERIAL CHANGED TO SOLID GRAY COLOR
	SS-4	
40-41.5	2-3-3	BROWN SILT - SOME GRAY MOTTLING
	SS-5	
45-46.5	2-4-6	BROWN F SANDY SILT (WET)
	SS-6	
50-51.5	3-6-8	BROWN SILT @ 51 BROWN SILTY SAND
		BOTTOMED HOLE @ 0910 AND 51.5 FT.

20 JUNE 1978
~~HEAD QUARTERS BUILDING~~
SUBSTATION BORE HOLE

DEPTH	BLOW CT.	REMARKS
10-11.5	SS-1 3-5-4	GRAY SILTY SAND FILL
		OIL IN MARE
13		DRILLING VERY SOFT / RED BRICK GWT DISCHARGE
15-16.5	SS-2 2-7-3	FILL MAT / DEBRIS MULTICOLOR
		VERY STRONG COLOR
		DISCHARGE WATER - FULL OF DEBRIS
20-21.5		NO SS TAKEN DUE TO GARBAGE
		DRILLING SMOOTH
25-26.5	SS-3 1-4-11	0% RECOVER
		OIL STILL IN MAT
30-31.5	SS-4 2-2-3	PLASTIC GRAY SILT
		31. CONSIDERABLE AMOUNT OF OIL IN SAMPLE
35-36.5	SS-5 2-2-2	GRAY F SANDY SILT
		SOFT WET
		37' SILT
40-42	ST-1	PLASTIC SILT
42-43.5	SS-6 1-2-2	GRAY SILT - W/OIL - ODOR

43.5
51.5
95.0

ATTACHMENT 10

MEMORANDUM:

TO: Hans Neukomm

FROM: I. (Nick) Garcia-Bengochea & John Ramage

DATE: 1 August 1978

RE: Wacker Siltronics Electrical Substation
Soils Report

PROJECT: P11054.C1

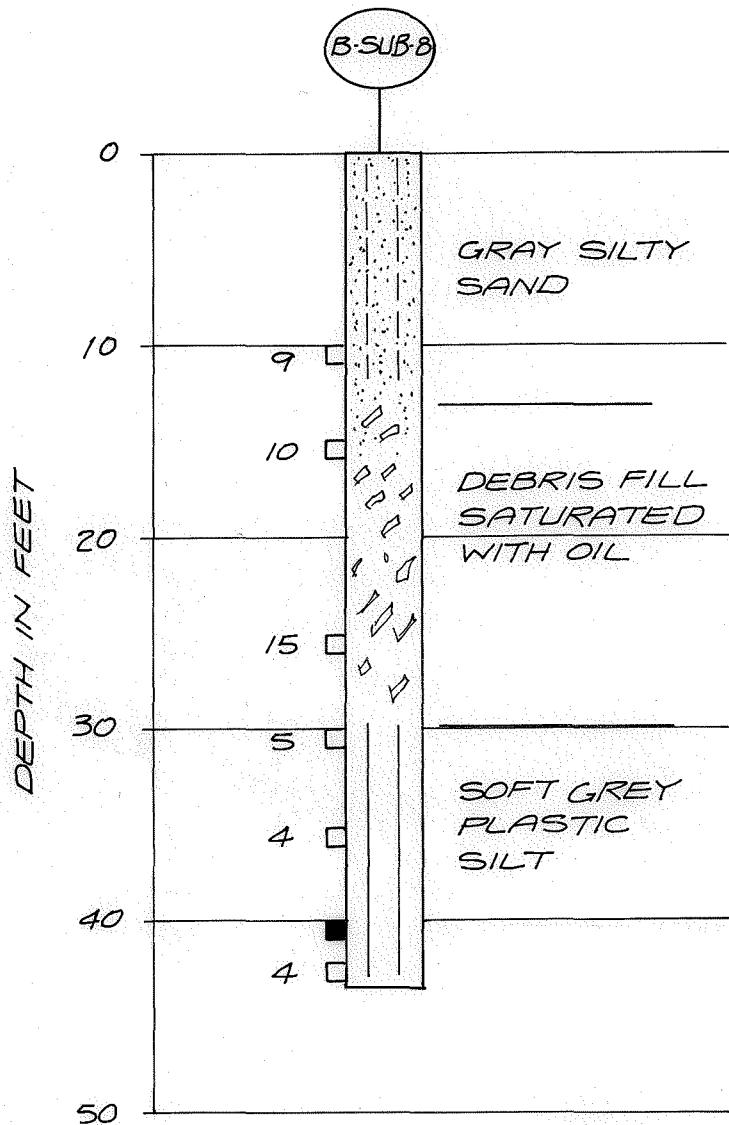
A log of a test boring drilled within the perimeter of the proposed substation is shown on Figure 1. Based on this test boring, the upper 13 feet of soil in the substation area consists of relatively free draining silty fine sands of loose density. Beneath the silty sands is a horizon of random fill and debris saturated with oil and approximately 17 feet thick. The debris contains brick and wood in a loose state. Underlying the debris is a strata of soft to medium soft plastic silts.

The random fill layer, because of its irregular nature, precludes the applicability of conventional soil testing and foundation analyses for foundation design. The random fill and soft plastic silts will cause excessive settlement if the substation is constructed without foundation treatment. It is recommended that a surcharge pressure be applied to the electrical substation area equal to twice the magnitude of the maximum footing pressure. Such a surcharge loading will reduce the magnitude of total and differential settlement.

Current plans call for a five foot earthfill surcharge over the substation area to be left in place for a minimum of 30 days. Using the above criteria that design bearing pressures should not exceed one-half the surcharge pressure, 250 to 300 psf would be the maximum design bearing pressures recommended.

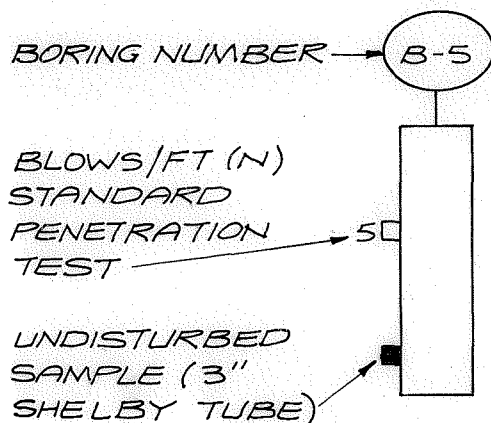
If any questions arise concerning this note, please contact I. (Nick) Garcia-Bengochea or John Ramage.

rs



NOTES:

1. TEST BORING DRILLED 20 JUNE 1978
2. A CME 55 ROTARY DRILL RIG USED FOR DRILLING.
3. APPROXIMATE GROUND ELEVATION IS +34 ABOVE CITY OF PORTLAND DATUM.



LEGEND

FIGURE 1
WACKER SILTRONICS
SUBSTATION TEST
BORING LOG

ATTACHMENT 11

Leta E. Gorman OSB # 984015
E-mail: leta.gorman@jordanramis.com
Christopher L. Reive, OSB # 833058
E-mail: chris.reive@jordanramis.com
JORDAN RAMIS PC
Attorneys at Law
Two Centerpointe Dr 6th Flr
Lake Oswego OR 97035
Telephone: (503) 598-7070
Facsimile: (503) 598-7373
Attorneys for Plaintiff Siltronic Corporation

UNITED STATES DISTRICT COURT
DISTRICT OF OREGON
PORTLAND DIVISION

SILTRONIC CORPORATION, a Delaware corporation,

Plaintiff,

v.

EMPLOYERS INSURANCE COMPANY OF WAUSAU, a Wisconsin corporation; GRANITE STATE INSURANCE COMPANY, a Pennsylvania corporation; CENTURY INDEMNITY COMPANY, a Pennsylvania corporation; and FIREMAN'S FUND INSURANCE COMPANY, a California corporation,

Defendants.

Case No. 3:11-CV-1493-ST

DECLARATION OF THOMAS C. MCCUE IN SUPPORT OF PLAINTIFF SILTRONIC CORPORATION'S SECOND MOTION FOR PARTIAL SUMMARY JUDGMENT AGAINST DEFENDANT EMPLOYERS INSURANCE COMPANY OF WAUSAU ON SILTRONIC'S FIRST CLAIM FOR RELIEF

I, Thomas C. McCue, hereby declare:

1. I make this declaration based on personal knowledge and from my review of Siltronic Corporation's ("Siltronic") records and I am competent to testify about the matters stated herein. I make this declaration in support of Plaintiff Siltronic Corporation's Second Motion for Partial Summary Judgment Against Defendant Employers Insurance Company of Wausau.

Page 1 - DECLARATION OF THOMAS C. MCCUE IN SUPPORT OF PLAINTIFF SILTRONIC CORPORATION'S SECOND MOTION FOR PARTIAL SUMMARY JUDGMENT AGAINST DEFENDANT EMPLOYERS INSURANCE COMPANY OF WAUSAU ON SILTRONIC'S FIRST CLAIM FOR RELIEF

2. I am the former Manager, Environmental Affairs, for Siltronic Corporation. I graduated from Oregon State University with a BS, General Science.

3. I have over 34 years of experience in the environmental compliance and remediation industry and have held a variety of environmental management positions at all levels of responsibility, including corporate and overall site responsibility for regulatory affairs, legislative tracking, permitting, program design, cost control, regulatory compliance, and environmental management systems design.

4. My areas of technical expertise include regulation research and assessment, coordination of regulatory requirements with operational methods and manufacturing objectives, environmental impact assessment, coordination of energy conservation, resource recovery and waste reduction to meet environmental goals, site remediation and risk management, and closure of impacted sites.

5. I began working at Siltronic in 1991. As the Environmental Manager at Siltronic, I coordinated services necessary to conduct a remedial investigation, risk assessment, and feasibility study at Siltronic's operating facility. The investigation involved assessment of impacts to air, soil, and groundwater adjacent to the Portland Harbor National Priorities List site. I coordinated Siltronic's responses to Oregon Department of Environmental Quality ("DEQ")-ordered remedial investigation and source control measures in anticipation of multiparty litigation. I also coordinated Siltronic's response to an Agreement and Order on Consent from the U.S. Environmental Protection Agency ("EPA") for an in-river Early Action to address sediment contamination, as well as a response to records requests in support of equitable allocation of cleanup costs.

6. Unless otherwise noted, documents attached to my declaration are true and correct copies of the documents that I reviewed from the Siltronic files. All of the documents were

maintained at the Property in the regular course of business and, in most instances, the documents and photos referred to in this declaration were provided to the DEQ and EPA.

7. To respond to Oregon DEQ and EPA demands for information, I gathered, reviewed, and analyzed information, documents, and photos that are maintained at Siltronic in the regular course of business. In the regular performance of my job functions at Siltronic, I was familiar with the business records maintained by Siltronic. The documents I am relying on for purposes of this declaration were created and the photos taken at or near the time persons with knowledge of the activity, transactions, and events reflected in such records occurred. They are kept in the course of business activity conducted by Siltronic. In connection with making this declaration, I have personally examined these business records as they relate to the subject of Siltronic's motion.

8. Siltronic's predecessor entity, Wacker Siltronic, purchased the property located at 7200 NW Front Avenue, Portland, Oregon (the "Property") in August 1978 from the City of Portland acting by and through the Portland Development Commission ("PDC").

9. As later explained to Siltronic in 1985 by the PDC, prior to 1978, Northwest Natural and its predecessor, Pacific Gas & Coke ("PG&C"), used portions of the Property and adjacent aquatic lands for Manufactured Gas Product ("MGP") waste disposal from approximately 1940 or 1941 to 1956, when MGP operations ceased. Between then and Siltronic's purchase, MGP waste was spread across the Property and covered with fill materials including Willamette River dredge spoils, which themselves may have contained hazardous materials. Siltronic first learned of these disposal activities several years after its purchase of the Property, when the relevant facts were disclosed by PDC.

10. MGP Waste: The following describes MGP waste disposal operations further:

- a. 1940 – 1956: Starting in 1940 or 1941, MGP waste was collected in two effluent settling ponds that occupied property on both sides of what later

became the property boundary between Siltronic and Northwest Natural. The effluent ponds discharged directly to the Willamette River. A much larger waste disposal lagoon was constructed on what is now the Siltronic property in about 1950. The waste disposal lagoon received overflow from the effluent ponds that had previously discharged directly to the river. An additional smaller waste disposal pond (located further east of the lagoon) is also visible in aerial photographs from the same time period. (*See* Exhibits 1 and 2.) The effluent ponds and lagoon remained in place until approximately 1967. The volume of waste disposed by PG&C on the Siltronic property is unknown. DEQ has estimated that the effluent ponds and lagoon contained at least 6 million gallons of liquid waste, including process water and MGP byproducts, and may have also contained as much as 3.9 million gallons of dry tar.

- b. 1956 – 1978: Although MGP operations ceased in 1956, MGP wastes remained in the ponds and lagoon until the mid-1960s. (Exhibit 3.) Following termination of MGP operations, the ponds were partially filled with the remaining MGP solid waste, including lampblack and spent oxide. The aerial photo history indicates that MGP waste from the Northwest Natural site was spread across the Siltronic property. (*See* Exhibit 4.) Wastes remained in the ponds and lagoon until 1965. During this time period, operations on the site consisted mostly of filling. MGP waste was incorporated into the fill, along with quarry rock and overburden, and Willamette River dredge spoils (which likely included sediments impacted by direct discharge of MGP wastes and other sources). The initial fill estimate was 1,529,400 cubic yards. The use of

MGP waste as fill has resulted in documented impacts to soil and groundwater across the majority of the Siltronic property.

11. Dredging: The following describes the dredging on the Property in 1979:

- a. Siltronic does not have any active waterfront or over-water operations that would require maintenance dredging. There was outfall construction at the Property in 1979 that did involve dredging of materials in the course of construction of a submerged outfall for the discharge of treated effluent and storm water.
- b. In February 1979, an outfall for treated effluent and storm water began being constructed along the northeast border of the Property. The outfall construction excavation included a trench and placement of an outfall pipe from the wastewater treatment plant to the river and the removal of fill material in a section of the riverbank above high water level and a limited amount of submerged sediments.
- c. Dredge operations occurred on May 18, 1979. Oily sediment was disturbed during excavation and an oil boom was placed around the dredge area. (*See Exhibits 5-8.*) The Oregon Department of State Lands (“DSL”) and US Army Corps of Engineer permits allowed for removal of up to 300 cubic yards of material. (*See Exhibit 9.*) The actual volume removed is unknown.
- d. Photos show placement of an oil boom in the river to contain surfacing oil on May 18, 1979. (*See Exhibit 8.*) Dredge material was placed on the top of the riverbank away from the river that same day. Pile driving activities on May 23-24, 1979, caused more oil to surface inside the boomed area. (*See Exhibit 5.*) On May 31, 1979, some portion or all of the dredge

materials were placed behind the containment collar as backfill as allowed in the outfall construction permit. (*See* Exhibit 9.)

- e. After discovery of the oily material at the river bank, a containment boom was placed around the working area to prevent dispersal of oil. (*See* Exhibit 8.) The Coast Guard was informed of the discovery. The contractor cleaned the material up and the containment boom remained in place until the completion of the outfall construction. (*See* Exhibit 5.)
- f. A dredged material disposal agreement between Wacker Siltronic and the Port of Portland, dated May 17, 1979, indicates that the dredged materials were intended to be disposed of in the Swan Island Lagoon disposal area. A handwritten note on the agreement, dated February 21, 1980, indicates that the material was not appropriate for disposal at Swan Island due to its oil content, and was instead placed on the Siltronic site. (*See* Exhibit 10.)
- g. A diagram showing the areas dredged and where the dredged materials were disposed of is attached hereto as Exhibit 11.

12. The foregoing information regarding MGP waste and dredged materials have been disclosed in reports and statements to both the DEQ and EPA.

I HEREBY DECLARE THAT THE ABOVE STATEMENT IS TRUE TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT I UNDERSTAND IT IS MADE FOR USE AS EVIDENCE IN COURT AND IS SUBJECT TO PENALTY FOR PERJURY.

Dated this 22nd day of July, 2014.

/s/ Thomas C. McCue
Thomas C. McCue

CERTIFICATE OF SERVICE

I hereby certify that on the date shown below, I served a true and correct copy of the foregoing DECLARATION OF THOMAS C. MCCUE IN SUPPORT OF PLAINTIFF SILTRONIC CORPORATION'S SECOND MOTION FOR PARTIAL SUMMARY JUDGMENT AGAINST EMPLOYERS INSURANCE COMPANY OF WAUSAU ON SILTRONIC'S FIRST CLAIM FOR RELIEF on:

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- ☒ by ECF.

DATED: July 30, 2014.

/s/ Leta E. Gorman
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Of Attorneys for Plaintiff Siltronic Corporation